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Original Articles

THE THREE-CLASS (FREIBANK) MEAT SYSTEM AS AN AID IN ERADICATING TUBERCULOSIS.

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The federal meat inspection system is essentially a two-class meat system, that is, meats which come to inspection are either "passed" for unrestricted trade or they are "condemned" and thus excluded from use as food.

In certain other countries, meats are divided into three classes, namely, a *first class* containing meats which are "passed" for unrestricted trade, a *second class* (*Freibank* meats) containing meats which are allowed on the market under certain restrictions, and a *third class* containing meats which are condemned, and thus excluded from the food supply.

The purpose of this article is to bring the three-class system to a more general knowledge among physicians and, in particular, to point out certain advantages it possesses as an aid in eradicating tuberculosis. The discussion will be confined to "meat inspection" in the more strict sense of the term, and will not deal with that portion of the law which involves points frequently classified in other countries under "food inspection."

THE FEDERAL MEAT INSPECTION LAW.

The federal meat inspection law provides for inspection of cattle, sheep, goats, and swine, the meats or meat food products of which are to enter into interstate and export trade. It is administered by the Bureau of Animal Industry, under direction of the Secretary of Agriculture. It makes a postmortem inspection mandatory, and this inspection is conducted by veterinary inspectors, who, under the regulations, must be graduates of recognized veterinary colleges, and who, in addition, have passed a civil service examination in order to obtain appointment. The law gives the Secretary of Agriculture discretion to require an antemortem inspection of the animals in question, and under present regulations this has been made mandatory for all animals killed at abattoirs.

The law provides for three important exceptions, namely for farmers, for retail butchers, and for retail dealers. In order to exercise some control over these excepted cases a system of certificates (to be made out by the farmer, the butcher, or the dealer) has been provided for by the regulations, and by means of this system the Department of Agriculture is able to discover whether a person claiming to be a farmer, a butcher, or a retail dealer is in reality a wholesale dealer or a packer.

From a study of the law and the regulations, the following points develop:

1. Cattle, sheep, goats, and swine, which are slaughtered at an abattoir standing under federal supervision, are subjected to both antemortem and postmortem inspection, with a view to preventing the use of meats and meat food products which are "unsound, unhealthful, unwholesome, or otherwise unfit for human food."

2. If an animal be slaughtered elsewhere and brought, with all the organs except the stomach and intestines attached, to a registered abattoir, it may be certified in case it can pass the postmortem inspection; in other words, it is possible for an animal to come to certification without having been inspected antemortem; as a practical proposition, however, this involves only a very few hogs.

3. A farmer or a retail butcher or a retail dealer may, on complying with certain prescribed conditions, enter into interstate trade with meats which have not been subjected to veterinary inspection; but such meats do not bear federal stamp.

4. Local butchers and packers engaging solely in intrastate (not interstate) trade do not come under the federal inspection.

5. Meats of animals other than cattle, sheep, goats, and swine do not come under the present meat inspection law.

LOSS THROUGH CONDEMNATIONS.

According to Solicitor McCabe of the U. S. Department of Agriculture, at a conservative estimate, the value, if healthy, of the carcasses and parts destroyed for food by federal inspectors during the course of one year is more than $2,500,000. Doctor Dyson, the chief consulting veterinarian for certain large packing interests, places the loss at about $3,000,000 to $3,500,000 annually.

Accepting the more conservative estimate by Solicitor McCabe, and accepting 83,931,695 as the population of the country (for 1906), it is seen that at present the annual federal condemnations alone amount approximately to only 2.9 cents per capita of population. As a per capita loss this seems almost infinitesimal; still, in the aggregate, it amounts to nearly as much as the present annual appropriation ($3,000,000) for the meat inspection.

In this connection it may be pointed out that under the new law the number of veterinary inspectors has already increased from 324 to 531 (on Dec. 1, 1906), namely an increase of about 63 per cent. There has also been an increase in the number of houses under inspection. In the words of Solicitor McCabe, "The number of establishments under inspection is 632, and the number is increasing daily."[1]

1. Circular 101, B. A. I., p. 12.

This increase naturally means that under the rules in force in 1906, the actual (not proportional) federal condemnations will increase with the increased number of houses inspected. Hence the foregoing estimates will increase even when viewed solely on the basis of federal condemnations.

It is not difficult to foresee that the tendency of the existing federal law will be to eliminate the most diseased animals prior to the federal antemortem inspection and to bring these animals into the local slaughter houses which do not stand under federal control. This will naturally follow efforts of the packers to avoid purchasing animals which can not be reasonably sure of passing the federal antemortem inspection. State and local authorities will eventually see themselves forced, for self protection, to adopt meat inspection regulations. When this occurs, it is to be expected that the proportion of condemnations under such state or local inspection will exceed the proportion of federal condemnations. This increase will be due, not to more stringent regulations, but to a greater proportion of disease among the animals presented for slaughter. This point has, in fact, already made itself felt in at least one stage, where, according to information which I must consider trustworthy, the proportion of tuberculous animals killed at the slaughter houses has greatly increased since the enforcement of the new federal law.

Thus, as meat inspection spreads in this country, the natural tendency will be to gradually increase the $2,500,000 or $3,000,000 annual condemnations to a much greater sum, which it is difficult to estimate conservatively. Considering the differences which may exist in state or local regulations, an eventual annual condemnation of $7,000,000 to $10,000,000 per year for the entire country does not seem impossible. This would mean a per capita loss of no insignificance, namely, about 10 cents or more.

The figures quoted ($2,500,000 to $3,000,000) do not represent the net loss, but the value of the meat if it were healthful. As a matter of fact the packers are able to utilize a portion of this material for purposes other than meat (grease, lard, dry tankage, etc.). For the following estimates as to the values of healthy and diseased carcasses treated in various ways I am indebted to Dr. Dyson:

BEEF.

1. Dressed steer of 600 pounds at 8¾ cents.....$52.50
2. Same, if tanked:
   113 pounds No. 1 non-edible tallow at 6¾ cents..$7.63
   98 pounds dry tankage at ¼ cent..... .24
   $7.87
   [Percentage lost, 85; percentage saved, 15.]
3. Same, if made into canned meat:
   504 pounds canned meat at 4 cents.....$20.16
   96 pounds bone at 1½ cents..... 1.44
   $21.60
   [Percentage lost, 58.86; percentage saved, 41.14.]

PORK.

4. Dressed hog, 203 pounds at 10¾ cents.....$21.82
5. Same, tanked for grease:
   94.4 pounds white grease at 6½ cents..... $6.13
   [Percentage lost, 71.91; percentage saved, 28.09.]
6. Same, if tanked for lard:
   94.4 pounds prime steam lard at 9.15 cents..... $8.64
   [Percentage lost, 69.04; percentage saved, 30.96.]
7. Same, with cuts boiled:
   26.3 pounds boiling hams at 15 cents..... $3.94
   17.4 pounds boiling shoulders at 9¾ cents..... 1.70
   25.7 pounds boiling loins at 9½ cents..... 2.44
   Fat to tank 133.6 pounds at 6½ cents..... 8.35
   $16.43
   [Percentage lost, 24.70; percentage saved, 75.30.]

In the vast majority of cases the hides of condemned cattle can, of course, be utilized, but as the foregoing estimates are based on the dressed carcasses, the hides do not enter into the present computation. It should also be remarked that the foregoing cash estimates will vary slightly according to the varying market price.

THE FINANCIAL LOSS.

When it is recalled that the condemnation of a carcass means a net loss of 30 to 85 per cent. to the packer it is seen that the condemnation of meat involves much more than a purely academic problem. Any classification of meats necessarily means a financial loss to some one, with potential increase in price to the public. It follows, therefore, that in connection with any classification adopted it is necessary to consider the public health, the public purse, the butcher and the stock raiser. While public health should not be sacrificed to the purse of the butcher and stock raiser, the commercial interests should not be sacrificed to matters of ungrounded sentiment.

When meat is condemned in a large packing house a loss of one or two extra animals may represent an insignificant proportion of the invested capital. But when we extend the system of condemnations from the packing houses to the local butcher who kills only one to ten animals per week, the condemnation of a steer worth $60.00 becomes a very much more serious matter. In justice to the small butcher, condemnations should be cut down to the lowest possible point consistent with a proper safeguarding of the public health.

If now, by any method not inconsistent with the public health, it is possible to realize from condemned carcasses a higher percentage than those given in the foregoing estimates, 2, 5, 6, it is clear that the amount thus realized would represent a saving in the economics of the country, and since the value lost by condemnation (by decreasing the supply) has a tendency to increase the price of meat, it seems reasonable to assume that any increase in the price of meat attributable to a condemnation could be inhibited in proportion to the greater value which might be saved by utilizing a portion of the condemned meat in some way other than by rendering it into lard or grease.

Such a method of saving meat is presented by the so-called *Freibank* system.

THE FREIBANK SYSTEM.

The system of the German *Freibank* and compulsory declaration of the condition of inferior meats is very old. The municipal laws of Augsburg in 1276 prescribed that inferior meat should not be sold without giving notice as to its quality. In 1404 the municipal laws of Wimpfen provided that the *Freibank* (from the German *frei*, free, here in the sense of unconnected or separated, and *bank*, a counter or stall) should be situated three paces away from the regular counters. The *Freibank* was, therefore, a counter which was free or separated from the counters on which the first class meats were sold. The term *Finnenbank* is sometimes used for these special meat stalls, because the measly meat (*finniges Fleisch*) especially is sold at these places. This system of *Freibank* has been extended quite generally in Germany and is rapidly extending in France, Belgium, Italy and other countries of Europe.

It has been more or less general experience that the introduction of the *Freibank* system has at first been met by prejudice from various sides, but it is also experience that this prejudice gradually wears off and that in some places the demand for this meat becomes greater than the supply. If introduced into this country the *Freibank* system will doubtless experience the same history it has had elsewhere.

If a form of the *Freibank* system, slightly modified to suit the conditions in this country, could be adopted in place of our present two-class system of meats the result would be that not only would we have a method by which a considerable economic loss could be saved to the country but, more important still, we would have a method at our disposal which would doubtless be a great aid in helping to eradicate tuberculosis from the dairy herds.

Meats could be divided as follows:

1. *Inspected and Passed.*—These meats should be only such as are placed on the market without restriction. They would include fresh meats, certain canned meats and cured meats. They would correspond to the present "U. S. Inspected and Passed."

2. *Inspected and Passed as Freibank Meats.*—This class would include all meats which could hardly be allowed on the market without restrictions and in fresh condition, but which could be safely (viewed from a sanitary standpoint) allowed on the market if they were properly cooked. In order to eliminate any possibility of fraud or any unfair competition with the "inspected and passed," it would seem wise to require that all *Freibank* meats be cooked. If prepared in a registered abattoir they could best be canned, and the cans should bear some such mark, in raised or depressed letters, as "Inspected and passed as *Freibank* meat." If sold uncanned by a local butcher, state and local regulations should provide that they be cooked and sold under declaration.

3. *Inspected and Condemned.*—This class would contain the meats which are unconditionally condemned as food, and would thus represent all those meats of the present "inspected and condemned" class which could not be properly passed even in cooked condition.

OBJECTIONS AND DISADVANTAGES.

In preparing this article I am not unaware of the fact that at first thought the average American will not be enthusiastically in favor of the *Freibank;* that some persons will view it as a wild, academic theory; that some will claim that what is not good enough for one class of persons to eat is not good enough for another; that some will say we have so much good meat in the country that it is unnecessary to eat inferior meat; or that there will be no market for this meat; that it will be used in orphan asylums, prisons and cheap boarding-houses and restaurants; that it will jeopardize our entire canned meat industry; that it will produce another meat scandal, etc. These are, to a great extent, practically the objections which have been raised against the system elsewhere, and the same objections may be expected here. It seems legitimate, therefore, to discuss at least some of them.

ITS SANITARY ASPECT.

Since the regulations could be so framed as to allow only such meats to come into the *Freibank* class as could be safely consumed when cooked and canned, it is self-evident that, from this point of view, the public health would be amply safeguarded; hence no valid sanitary argument can be raised against the system.

EXCLUSION OF FRAUD.

If the cans were stamped in raised or depressed letters with the words "Inspected and passed as *Freibank* meat," or with some other descriptive designation, the purchaser would be aware of the class of the meat he was buying. If he did not desire to purchase meat of that class it would be possible for him to recognize immediately whether such meat were being sold to him. The person who desires this meat, which would naturally be of lower price than would be the first grade of meat, would be given opportunity to purchase it.

It would hardly seem reasonable for any person to oppose the *Freibank* system solely on the ground that he personally does not wish to purchase a second grade of meat. On the contrary, such person should logically welcome the general introduction of this system, for it would eventually give him a protection which he does not have at present.

ITS MARKETABILITY.

Admitting the sanitary safety of the *Freibank* system, the important question arises whether *Freibank* meats could find a market in this country. In regard to this point attention may be invited to the following facts:

There are at present tens of thousands of persons in this country who have immigrated from countries (such as Germany) in which the *Freibank* system has been in existence for decades and even for centuries. It is, therefore, reasonable to assume that at least not an inconsiderable number of families already familiar with the system are now in the United States. That some of these families used *Freibank* meats in their native country can not well be questioned, and having once used these meats and having found that they are wholesome, it is reasonable to suppose that they would use them again. The system would, therefore, not have to start *de novo* with the entire population.

That it would take some time to introduce the system among native-born Americans is self-evident. But in view of the economic losses which will eventually result from a general introduction of state and local meat inspection, it would seem reasonable to assume that it will be easier to begin that educational movement now, with federally inspected meats, than to postpone it to a time when state and local inspection becomes general and when on this account the amount of *Freibank* meats would be vastly in excess of the present available stock. It would also seem reasonable to assume that the federal guarantee of the non-dangerous quality of *Freibank* meats, as implied in the federal stamp, would be of great importance in leading to the adoption of the three-class system by state and local authorities.

NOT ENTIRELY AN INNOVATION.

The point might be raised that this system is a radical revolution in our present American meat trade. This point would not be altogether well taken. It may, for instance, be recalled that in some cases certain carcasses are permitted to be used only for lard; this is in itself a beginning of the three-class system. Again, during the period when the microscopic inspection of swine for trichinosis was practiced by this government certain trichinous carcasses were allowed to be cooked and sold; yet no harm has been reported as a result of this action, which is in itself a modified three-class system. Further, under existing regulations, localized lesions are cut out and the rest of the carcass is passed; this is a step toward the three-class system.

The system suggested for consideration contains no principle of meat inspection new either to this or other meat-inspecting governments; it simply carries out well-recognized principles to their logical conclusion and informs the purchaser more in detail of the official action taken by meat inspectors than does the two-class system.

CHEAP MEALS.

If a man takes a 10-cent dinner in a cheap restaurant he does not expect to be served with the finest porterhouse steak. He pays for what he receives and receives what he pays for, namely, a cheap meal of inferior monetary though not necessarily of inferior nutritive value. Under existing conditions he may be eating meat purchased by the cheap boarding-house or cheap restaurant from some local butcher whose uninspected meat may be of too poor a quality to enter even into the *Freibank* class; certainly in such cases it would be no injustice to him to serve a better class of meat guaranteed under the three-class system by the government.

So long as local meat inspection (as distinguished from federal inspection) is on such a low basis as it is in this country, or on no basis at all, it would seem just a little strained to maintain that it would be an injustice to the public to guarantee the safety of sterilized *Freibank* meats, inspected by competent veterinarians. The cheap boarding-house and cheap restaurant argument is so weak under existing conditions that it is rather difficult to consider it seriously. If, however, the local meat inspection in any given city is sufficiently high to justify such a measure (New Orleans, for instance), local regulations could be enforced prohibiting *Freibank* meats in boarding-houses and restaurants.

THEORY AND PRACTICE.

The objection that the three-class system is a theory can be made only by persons who are uninformed as to the history of the system and who will not take the trouble to inquire into it. It is not a theory, but a practice of long standing in a number of countries which stand on a much higher plane of local meat inspection than does this country.

To the person who objects on the ground that what is not good enough for one person is not good enough for another, the reply is simple: So far as safety is concerned, *Freibank* meats are good enough for any person in the country. At present thousands of persons in this country are eating uninspected local meats of a quality inferior to that which would permit the meats to come into the *Freibank* class.

As for there being such a great amount of meat in the country that we do not need the *Freibank* meats, it may be replied that local butchers are daily selling these very meats and meats of much lower quality, uninspected and unlabeled. The public is daily purchasing and eating such local meats without any guarantee. The *Freibank* system would give the public a guarantee and a safeguard in reference to these local meats which is not given by the local butchers to-day.

As for the orphan asylums and prisons, the reply is that they ought to be glad of the opportunity of obtaining *Freibank* meats, of a better quality and at a lower price than much of the local meats they purchase to-day.

THE CANNED MEAT INDUSTRY.

If any packer believes that the *Freibank* meats would jeopardize his canned meat trade he has it in his power to protect his trade by not adopting the system. The system is elective, not obligatory. If the packer prefers to render into lard or grease carcasses which can be equally well cooked, canned and sold as *Freibank* meats, there is nothing in the system which would prevent him from following his own views, so far as his own trade is concerned. If the *Freibank* meat be objectionable, the packer ought not to ask for a better chance to advertise his meat than by showing that *he* cans no goods of *Freibank* quality.

ANOTHER MEAT SCANDAL?

It is rather difficult to understand how the introduction of the three-class system could result in another meat scandal. A scandal might easily be worked up by describing in detail some of the things which occur in local slaughter houses not under inspection, but when inspection is placed on a higher plane it is not the improvements, but the conditions which led to the improvement, that result in a scandal. The last meat scandal was not caused by the present meat inspection law but by the conditions which the law was framed to correct.

EFFECT ON ERADICATION OF BOVINE TUBERCULOSIS.

Quite aside from the points advanced in the foregoing let us turn to what I view as the greatest argument in favor of the *Freibank*, namely, its possibilities in connection with the eradication of tuberculosis from dairy herds, an effect which is illustrated in Denmark.

The laws existing in certain parts of the United States to the effect that all animals which react to the tuberculin test, thus showing tuberculosis, shall be condemned and destroyed are unnecessarily and unscientifically severe. Not an inconsiderable amount of this meat could safely be placed on the market without restrictions after the removal of the localized tuberculous lesions; an additional amount could be cooked, canned, marked as *Freibank* meat, and safely sold for food. The remaining portion should be destroyed.

If the ungrounded popular prejudice against the first two classes of meats mentioned in the foregoing paragraph can be reduced or removed, and if the farmers can be educated into shipping to such packing houses as are operated under inspection all of their tuberculous cattle a great gain will be made in the eradication of tuberculosis from the dairy herds.

If a packing house utilizes as *Freibank* meat such meat from tuberculous cattle as is suitable for this purpose, there would be decreased financial risk in admitting to slaughter animals which had reacted to tuberculin, or the packing house might purchase the animals subject to result of inspection—a plan already in vogue in certain places.

Feeding of all the tuberculous cattle of the country into abattoirs, inspecting these cattle to determine how much of the meat can, without danger, be used for food, and condemning the remainder, would be a great desideratum in the movement to eradicate tuberculosis from our dairy herds, hence also to decrease whatever danger of tuberculosis, especially in infants and children, may exist from using the milk. The eradication of this disease from the cattle of this country would naturally result in a decrease of tuberculosis in swine, hence a decrease in condemnations of meats and a tendency to a lower price for meats.

THE DAIRY HERD.

In any movement looking to the eradication of tuberculosis we should gain if possible the cooperation of the man who owns the dairy cows. To test his cows with tuberculin, then to destroy those which react to the test, is hardly the most promising method of obtaining his cooperation in the movement. In some states he is partially reimbursed for his loss. Such reimbursement, however, involves state appropriations, which are not always easy to obtain.

If in place of such a plan a method of procedure is

adopted which will enable the owner to obtain full packing value for his cattle, not only would the plan of eradication be more self-supporting (hence it would be more likely to meet with legislative support), but the owner of the diseased cattle would see that it lies in his financial interest to eliminate the tuberculous animals from his herd. Why not permit him to sell his tuberculous cows to some abattoir under inspection? If a cow is shown on postmortem inspection to have only a localized tuberculosis it is worth practically 100 per cent. If the tuberculosis is such that the meat may be canned it is worth about 59 per cent. for its meat, plus an additional sum (approximately $9.75) for its hide. If so tuberculous that it is rendered into tallow it is worth about 15 per cent., plus the value of the hide.

Should the state wish to add a bonus because of the condemnation, such bonus could be justly placed at a figure below that now given by certain states. Or if a state desires to reimburse to the extent of 30 per cent. for generalized cases and 60 per cent. for localized cases, why not permit the owner to save an additional percentage by which he could reduce his loss still further? It would not be a difficult matter (in case of state reimbursement) to arrange the scale in such a way that the owner would save from 80 to 90 per cent. of the value of the animal. To have a herd free of tuberculosis would be worth some loss on his tuberculous animals.

Finally, the point may be mentioned that if tuberculosis can be eradicated from dairy herds with no, or at most with little, loss to the owner, the increase in the price of milk will, to some extent at least, be inhibited, and the children of poor families will thus be in less danger of having this very important article of their diet decreased.

PERCUSSION OF THE CHEST IN INFANTS AND CHILDREN.*

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It seems to be a tendency of the present day to neglect percussion of the chest in early life. This is rather natural, since we find that more valuable, or at least more easily obtainable, results can be secured by auscultation. Furthermore, percussion of the chest in early life is a more difficult procedure and, unless properly done, less satisfactory in its results than is percussion of the adult chest. But, appreciating the valuable assistance one can obtain in the determination of obscure conditions in the thorax by means of properly carried out percussion, I am stimulated to offer this communication as a sort of protest against the neglect of so valuable a procedure.

Successful results from percussion depend on a full knowledge of the subject and its limitations. One must realize the importance of the position of the patient and the necessity of a proper technic and be capable of rightly interpreting the sounds produced by percussion.

PERCUSSION IN SOUNDS.

It is not my intention to go into a discussion of the physical qualities of these sounds, nor of the terms used to describe them. Some perception differs so much in different individuals that each will interpret differently the quality of the sounds he elicits on percussion. This, of course, makes no difference in the interpretation of the conditions in the chest, which the various sounds represent, as long as the individual investigator is capable of correctly determining the indications pointed out by the sounds as they are imparted to his ear.

The fewer terms used to describe them the less confusing. For this reason it is best to limit oneself to the following: Tympanitic, hyperresonant, resonant, relatively dull, dull, absolutely dull and flat. Of course, as Sahli expresses it, there is a consecutive series of sound qualities which range in countless gradations between the two limits—resonant and dull—differences depending on the amplitude of the sound vibrations. If desired, these can be indicated by modifications of the above terms.

The sounds produced on percussion depend, for their quality, on the nature of the organ percussed. The resonant sound developed over the normal lung is dependent on two factors: The air contained in the lung—the principal factor—and the vibration of the chest wall.

It was claimed by Williams, Bristowe and others and, to some extent, endorsed by Fagge, that the thoracic percussion sound was mainly due to the vibrations of the chest wall. In support of this view they pointed out that, without any apparent abnormality in the parietes, deformities of the chest gave rise to absolute dulness. In lateral curvature of the spine, for instance, the markedly convex projection formed by the ribs on one side of the back, generally, if not always, yields a dull sound. This is due to the fact that the peculiar conformation of the chest wall diminishes its vibrating area. The same result is obtained, to a less marked degree, in the normal chest, if percussion is made over the most convex portion of the chest wall just behind the posterior axillary line. It is generally conceded, however, that the percussion sound is chiefly due to the vibrations of the columns of air contained in the organs within the chest wall, but that the wall itself is a contributing factor. In children the chest wall, on account of its greater flexibility, contributes largely, and it is this feature that accounts, in the main, for the distinctly more resonant sound obtained on percussion of the chest of the child.

CHEST AREAS.

To percuss the chest of a child satisfactorily, it must be bared. In order to locate the positions of the normal organs, as well as the position of pathologic lesions in these organs, in their relationship to the chest wall, the divisions of the chest wall used in topographic anatomy (supraclavicular and infraclavicular, the mammary, the axillary, the supraspinous, the scalpular, interscapular and infrascapular) and the vertical and horizontal lines are used; (anteriorly the midsternal, the suprasternal and midclavicular; laterally the anterior, middle and posterior axillary lines, and posteriorly, the posterior medium and right and left scapular lines and the horizontal mammary).

POSITION.

The only satisfactory position for the percussion of the chest is the one which produces complete relaxation of the muscles and symmetry of its two sides. This is much more difficult to attain and much more important in children than in adults.

In infants and young children the front and anterolateral areas can be examined best with the patient lying flat on his back, with the head in direct contact with the bed, and maintained in the median position

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

by the hand of the attendant. The arms should rest at the sides of the body, the thighs and legs should be slightly flexed and the vertebral column should be straight. In this position the child is less resistant and more easily controlled, the body is less apt to sway, muscular relaxation is more complete, the percussion sound is more resonant, and one becomes accustomed to examine in a position which is frequently necessitated by the serious illness of the patient.

It is very easy to convince one's self of the importance of this position by a comparison of the results obtained by changing it, from time to time, during the examination. If, for instance, the head is forcibly turned to one or the other side, as is commonly done, or an arm is abducted until at right angles to the side of the body, one will immediately get a higher pitched sound over the groups of muscles which are thereby brought into a state of tension.

These differences will be greater in some children than in others, being less in those whose general musculature is capable of the greater relaxation, which usually means in those whose attitude of resistance to the examination is least.

For the lateral surfaces (the axillary regions) the position should be the same as for the front of the chest, save that the arms should rest on the bed at right angles to the vertical plane of the body.

The sitting posture is less satisfactory for percussion of both the front and lateral surfaces, because it renders the various chest areas less accessible, the body less fixed, and creates a tendency to push the abdominal organs upward. This is especially the case in children whose stomach and intestines are abnormally distended, or whose livers and spleens are enlarged.

A satisfactory position for the examination of the posterior and postero-lateral surfaces is much harder to secure. Those old enough and not too ill to sit up should be seated on a narrow table or chair, with the legs hanging over its side. The arms should be placed close to the sides of the body, the forearms across the lower abdomen, with the hands resting on the inner surfaces of the thighs. The body should be maintained in a natural stooping posture, without any lateral curving of the spine, and with the head again supported in the median position by the hand of the attendant. Marked flexion or abnormal extension of the body—positions which throw the back muscles into a state of tension—are objectionable. The drooping of one or the other shoulder, which results in tension of the muscles and consequent dulling of the resonance on one side or the other, can usually be prevented by the attendant supporting the child, with one hand beneath the occiput and the other over the frontal region.

The turning of the head to one or the other side, or an asymmetrical position of the arms, has the same effect on the percussion sound over the back of the chest as over the front.

To examine the back of an infant it should be held against the chest of the attendant, with its head over her shoulder, its buttocks being supported by her right arm and hand when the head rests on her right shoulder and by her left arm and hand when the head rests on her left shoulder. The vertebral column should be straight and the two sides made as nearly symmetrical as possible by having the attendant steady the infant by holding its arm with her free hand.

The percussion of the apices is more unsatisfactory than in the adult. They are less well developed, the supraclavicular regions are small and hard to get at, and the isthmus of Krönig is very narrow. To obtain any result in the very young the patient must sit up or be held up and the examiner, standing either in front or behind, may place his thumb or finger in the fossa parallel to the clavicle and pointing toward the sternum.

In older children, and in infants too sick to sit up, or to be removed from the bed, the percussion of the back must be done with the infant lying first on one side and then on the other. In this case the results obtained from percussion of one free side must be compared with the results obtained from percussion of the other free side. To compare the free side with the side in contact with the bed will yield very misleading results, since the compression of the latter largely destroys its vibrating properties, and yields, therefore, a dull or sometimes flat sound.

I have frequently seen students locate the consolidation of a pneumonic process on the wrong side by percussing the chest of an infant with pneumonia while it lay on the unaffected side.

As a further illustration of the misleading effect of an incorrect position, I saw a mistaken diagnosis made, a few years ago, in a very important case by a very able clinician. He was called in consultation, to confirm the opinion which had been expressed by two pediatrists—that the infant did not have pneumonia. When he examined the child the youngster was fretful and resisted the examination in such a way as to throw the muscles on the left side of the chest, which was next to him, into contraction. Percussion over this area yielded a dull, almost flat, sound, while the opposite side was resonant. Auscultation over this dulled area revealed a relatively feeble respiratory murmur. The signs seemed so definite that a diagnosis of pneumonia was promptly and unhesitatingly made. As soon as the consultant left the house the child was placed on the opposite side of the bed, and as he resisted the examination in the same manner, in relation to the other side, a similar dulled sound was readily elicited over the right chest, while the side which had formerly been dull was entirely resonant. I mention this incident to impress on your minds the fact that even a careful, shrewd diagnostician may fall into very serious error unless he takes into consideration the peculiar influences of position on the sounds produced by percussion.

TECHNIC.

As to the technic of percussion, the best results can be obtained in young children by the finger-finger method. Instruments are apt to alarm, they are not as adaptable to the different portions and small size of the chest wall and they eliminate the palpatory element of the finger-finger method, which is of especial value in early life. In this method the distal phalanx of the middle finger forms the plexímeter. Its palmar surface is placed against the chest wall with moderately firm and even pressure. This limited area of contact of the finger with the chest wall avoids too wide diffusion of the sound when the blow is struck, and the moderately firm, even pressure avoids the dulling effect of a loosely applied finger and the discomfort of too great pressure.

The amount of pressure must be the same each time the finger is applied to the chest, in order to insure a satisfactory comparison of the sounds produced in striking corresponding portions of its two sides.

The older teaching, and the method which still seems to be largely used, of placing the full length of the fin-

ger against the chest wall and percussing over the middle phalanx, certainly should have no place in the percussion of the child's chest. Too much of the surface of the chest is covered, in consequence of which the resulting sound is not produced by the conditions immediately underlying the point over which the percussion is made, but represents the condition of the parietes underlying the entire length of the finger. A limited area of consolidation, such as one often finds in bronchopneumonia, for instance, might be very easily lost in the resonant sound transmitted through the fingers from the adjacent areas of healthy lung. Indeed, to reduce the point of contact of the pleximeter finger to the minimum the recommendation of Plesch—that the best results in percussion can be obtained by flexing the finger at the first interphalangeal joint, applying the tip of the finger to the area to be percussed, and delivering the blows on the finger thus flexed—is well worthy of consideration by those whose finger joints are flexible enough to admit of this manipulation.

It is not essential, in examining infants and young children, to place the finger parallel to the ribs, first, because it is impossible to get the finger into the interspaces, and second, because the flexibility of the ribs is so great that they have very little deadening effect on the sound. As a working basis, however, it may be better to follow out this established method.

The percussion movement should be from the wrist, not from the elbow; the tip of but one finger should be used as a plexor and it should strike the pleximeter finger perpendicularly. The strokes should be equal in force for each comparison, not made too rapidly nor repeated too frequently, and the percussing finger should remain in only momentary contact with the percussed finger. Percussion with the wrist joint stiff and the finger at an obtuse angle dulls the sound, makes the patient uncomfortable and the stroke inaccurate. Rapid and frequently repeated strokes confuse the ear, and prolonged contact of the striking and struck fingers reduces the vibration of the chest wall and dulls the sound.

The most important part of the procedure relates to the force of the stroke. It should always be light—the minimized stroke of Gairdner—because the hard stroke is alarming and painful to the patient, and because, as Gairdner has pointed out, "percussion does not operate directly downward, nor in the direction of the impact only, but in proportion to the strength of the stroke laterally, diagonally and in every possible direction." Consequently, any area of circumscribed dulness may easily be lost in the transmitted resonance from surroundng healthy lung tissue if the stroke is too strong.

The advantages of this light stroke can not be too strongly emphasized, and when I speak of light percussion, I mean very light percussion, percussion that will produce a sound that is audible only a very short distance from the patient. I have no difficulty in persuading my students of its value and I am convinced that anyone who will give it a careful trial will appreciate its importance.

I do not mean to deny that there are instances in which valuable results may be obtained by using stronger percussion; indeed, it is very important, under certain conditions, to vary the force of the percussion stroke, as it is also important at times to vary the degree of pressure of the finger applied to the chest wall, but the point which I want to make is that, for ordinary percussion, the light stroke is far superior to the strong one, and that it is the one which we should recommend to our students.

CONDITIONS WHICH INTERFERE.

In addition to a defective position of the patient, and a poor technic, there are certain other influences which are apt to yield misleading results. For instance, the act of respiration. The sound produced at the end of inspiration, when the chest is tense, notwithstanding the increased amount of air in the lung, is higher in pitch than the sound elicited at the end of expiration, when the muscles are relaxed and the chest wall more flexible.

The fixed position of the chest wall during the act of crying dulls the resonance, especially in the lower posterior portion of the thorax, but there is probably nothing which so effectually interferes with one's results as the presence of an abdomen distended with gas. This effect may be unilateral or bilateral, depending on which of the abdominal viscera are distended. The presence of gas in the stomach, for instance, may produce a tympanitic note throughout the entire left chest, while the distension of the colon or both colon and stomach may produce a tympanitic sound throughout the entire chest. Most commonly, of course, the lower posterior portions are affected, and more often, on account of the protecting power of the liver, the left than the right. This tympany is very misleading, and we have all doubtless heard the dull sound of a consolidated lung entirely obliterated by the transmitted tympanitic sound from a distended stomach or gut.

I am at a loss to advise you as to a satisfactory method of percussion under these conditions, but I am inclined to believe that the lateral limitation method of Schott is sometimes helpful. This consists in placing three fingers of the left hand on the chest wall and percussing over the middle phalanx of the third finger. It limits the lateral vibration of the chest wall and, as the tympanitic sound is probably largely transmitted through the medium of the chest wall, its transmission is thereby partly controlled.

There is another point which is well worthy of consideration in percussion of the lungs, and that is the relationship of the patient to the walls of the room in which he is examined. If he is placed close to the wall, with one side of the body next to it, the percussion sound on that side will be more resonant than on the opposite side. If he is placed in the corner of a room with the two sides of the body equidistant from the walls, the resonance over both sides, as has been pointed out by Dr. Brown of Saranac, will be enormously increased. In the light of these facts, therefore, it is well not to have the patient too close to the walls of the room while the chest is being percussed.

There are so many conditions which influence the results of percussion, especially in the child, that one has no right to accept any area of dulled resonance as indicative of changes within the chest wall until all possible external influences have been eliminated.

THE SOUNDS OF THE NORMAL CHEST.

The sound elicited on percussion over the lung of the normal infant, or young child, that is, one in whom there is not only a normal condition of the chest wall, but also of the organs within the thorax, and a normal condition and position of the abdominal organs, is much more resonant than the sound produced by percussion over the lung of a normal adult. The percussion of the front of the chest yields the following result: On the right—from the clavicle to the fourth rib—one elicits

the full normal pulmonary resonance of the child. Below this point, owing to the decreased volume of lung and the presence behind it of the liver, the sound becomes gradually dull and finally passes into the dull sound of the liver at the sixth rib. The anterior borders of the lungs do not extend under the sternum, in consequence of which there is no pulmonary resonance in this area. This latter and the increased volume of the percussion sound represent the only differences from the adult chest.

On the left side, however, the differences are more marked. The principal one is the presence of a relatively dulled area behind and beneath the inner third of the clavicle, which sometimes extends outward to the midclavicular line, and always downward until it fades into the cardiac dulness. This is apparently dependent on the posterior position of the lung and the consequent proximity of the great vessels. The existence of this relatively dulled area is not only not referred to in the text-books, but, on the contrary, we are usually taught that the percussion sound over the right upper chest is somewhat duller than over the left. Unless, therefore, one bears in mind the existence of this area, one is very apt, as I have observed, to interpret it as a pathologic condition.

Without the midclavicular line, and above the transverse mammary line, the resonance corresponds closely to that of the same area on the opposite side. Below this point the sound becomes tympanitic, due to the proximity of the stomach. Over the balance of the front of the left chest the sound varies from relatively dulled to dull, and will be referred to later in considering the percussion of the heart.

Laterally, on both sides, there is good resonance above the sixth rib. Below this point, on the right, the underlying liver produces a relatively dulled to dull sound, while on the left side the stomach yields a tympanitic sound.

Posteriorly the percussion sound is everywhere more resonant than over the back of the adult chest, because the muscles are less developed and the ribs and scapulæ more flexible. The most resonant areas are the infrascapular and interscapular regions; the next most resonant, the lower scapular; and the least resonant, the upper scapular and supraspinous regions. The dulling of the sound in the lower right infrascapular region, due to the proximity of the liver, marks the only difference in the two sides. The convex portion of the thorax on each side, just posterior to the posterior axillary line, has a decided dulling effect on the resonance, and to a much greater degree than in the adult chest.

The sounds over the apices, owing to the relatively poor development of this part of the lung, are relatively less resonant than in the adult.

PERCUSSION OF THE HEART.

In early life the heart occupies a somewhat different position in the thoracic cavity than in adult life. It is situated higher in the chest and more horizontally. This position is probably dependent on the size of the heart, the undeveloped condition of the lungs, the recumbent position in which the child spends much of its time, the less strenuous life which it leads and the higher position of the diaphragm.

In the infant the apex beats in the fourth space in, or just without, the midclavicular line. As the child develops there occurs a gradual change in the position of the apex. In this process of change it first descends in an almost perpendicular direction to the fifth space. It then gradually moves inward until it reaches the normal adult position, at a more or less indefinite period between the third and twelfth years.

It is readily manifest, when one realizes the position of the heart within the thorax in early life, that the relationship of the heart to the chest wall is necessarily different from that of the adult heart.

The entire heart is higher, in consequence of which the upper border is elevated and lies back of the second rib. The more horizontal position causes a relatively greater transverse diameter, which brings the right border to or a little beyond the right edge of the narrower sternum and the left, just without the midclavicular line.

As to the best method of determining these outlines by percussion, there is and always has been a great diversity of opinion. Many authorities advise against any attempt to determine the actual size of the heart, but prefer to determine its normality or abnormality by developing what is known as the absolute or superficial heart dulness; that is, the outlining by percussion of that portion of the heart not covered by lung and which is, therefore, in more direct contact with the chest wall. Others, and probably the majority, believe that more accurate information will result from attempting to determine the actual size of the heart by bringing out what is called the deep cardiac dulness. Still others use both procedures. Without going into the arguments advanced for and against these two methods, I would say that, in so far as children are concerned, I am in accord with those who believe that the most uniform and accurate results can be obtained by determining the actual size of the heart.

In infants the outlines can be determined best with the patient in the recumbent posture. In fact, in children at all ages, this position will yield more accurate results than can be obtained when the patient is upright.

The apex beat and the outlines are practically the same in the two positions in the very young. But even admitting that differences should occur, it really does not affect one's conclusions, provided one always percusses the heart with the patient in the recumbent posture.

Finger-finger percussion is preferable to instruments in outlining the heart. The stroke must be extremely light, even lighter than that used in the percussion of the lungs; so light, in fact, that the sound produced can not be heard unless the ear is held close to the chest wall. As Rosenbach says: "The object is to elicit the most delicate shades of sound. The softer the sound, the less distinct will be the independent sound of the chest wall or of the lung, and the more distinct will be the sound of the mass of the heart."

Goldscheider, who also advocates this method, says that this light stroke necessarily reduces the transverse extension of the sound, and that "the axial extension into the depths of the tissue greatly exceeds the transverse extension." To apply this light stroke properly, noise must be eliminated so far as possible, and one must know what sort of sounds will result. If one percusses toward the border of the heart, from resonant lung, the sound which is always slight will change abruptly when the deep borders of the heart are reached, from a light resonance to an almost imperceptible sound, and unless the stroke is light enough to produce this result the method is improperly applied.

As in lung percussion, only the distal phalanx must

be applied to the chest wall and the amount of pressure must be the same. The finger must be placed parallel to the particular border of the heart which is being outlined, and the stroke must always be made at right angles to the pleximeter finger and in the anteroposterior direction. This latter point is of the utmost importance, especially in determining the lower left border of the heart. In the normal chest the curve of the ribs becomes marked as the midclavicular line is approached. There is a natural tendency, therefore, as the left cardiac border is reached, to follow the shape of the chest and percuss against the left border rather than parallel to it. It is very manifest that this procedure will carry the left border of the heart much beyond its actual position, especially in those whose chest walls are thin, and particularly in rachitic children, in whom there is a marked drawing in of the lower anterolateral borders of the chest.

The application of the full length of the finger to the chest wall, with percussion over the middle phalanx, is especially objectionable in outlining the hearts of infants and children. As the extreme lower border of the heart is approached, for instance, the finger thus applied will cover resonant lung above, heart in its middle portion, and liver and stomach in their lower portions. The mixed sound resulting from such percussion is obviously too misleading to be of any practical use in outlining this part of the heart.

If the proper method is pursued, the left border of the heart is more easily determined than either the upper or the right. It is only when there is marked distension of the abdomen that this becomes difficult, and under these conditions, the full value of the light stroke will be fully appreciated.

The area of impaired resonance beneath the inner third of the left clavicle, which varies in different individuals, sometimes renders the determination of the upper border extremely difficult. Usually, there is a shading off to a less dulled sound, in percussing from above downward, before the cardiac dulness is reached, which enables one to determine the upper border of the heart more or less readily.

The bony resonance of the sternum and the higher position of the diaphragm and liver render the outlining of the lower right border difficult. In rachitic children with enlargement of the liver and chondrosternal thickening, its accurate determination is sometimes almost impossible.

Respiration unquestionably influences the result, but unfortunately, it is impossible in young children to control the respiratory movements as one can in the adult. One should make the stroke at the end of expiration, however, in so far as it is possible. The heart is then less covered by lung and in closer contact with the chest wall.

There is only one method by which the actual size of the heart can be determined, and that is the orthodiagraphic method of Moritz, which is of no value as a routine measure, because of the difficulty of its application and of the dangers attendant on the common use of the screen in *x*-ray work. Its discovery is clever, however, and it has its place in medicine as a measure by which we can determine which of the commonly used methods of outlining the heart is the most accurate.

The difficulty of the application of the *x*-ray to the determination of the size of the heart lay in the fact that, owing to the divergence of the Roentgen rays, the shadow cast by a body does not correspond to its true shape and size, but is enlarged and partly blurred. Moritz, in establishing his orthodiagraphic method, constructed an apparatus with which the outline of an object can be taken with parallel rays running vertically to the transillumination screen. He found it impossible to keep the entire bundle of Roentgen rays parallel, and, to overcome this, he employed, for making the projection, only that ray which strikes the transillumination screen at right angles, by placing the tube in a plane parallel to the transillumination screen, at the same time moving the marked vertical ray so that it is parallel to itself. In this manner he has succeeded in tracing the actual size of the heart.

The method has been applied extensively in Germany, mainly for the purpose of confirming the accuracy of the various methods of cardiac percussion. The results tend to show that the determination of the deep cardiac dulness is more accurate as an indication of the actual size of the heart and that the best results are obtained by the use of a very light percussion stroke. Orthodiagraphy has not been applied to the determination of the size of the infant's or young child's heart, and it would probably be attended with considerable difficulty, since the perfect control of the patient is an important factor.

I have been unable to persuade any of the Roentgenologists with whom I am associated to apply the method on account of their objection to the use of this screen, which has been largely responsible for the majority of the fatalities among the *x*-ray workers.

NOTE.—Since I wrote the above paper, I find that Hænisch, in a communication before the German Roentgen Society, reports the employment of the orthodiagraphic method radiographically, with the result of accurately estimating the size of the heart. In the discussion of this communication, Schoenberg made the statement that he had also found the method absolutely accurate.

DISCUSSION.

DR. G. H. CATTERMOLE, Boulder, Colo., thought that more attention should be given to the tactile sense during percussion. In children who are crying one can often get considerable information from the sense of touch in the finger used as a pleximeter.

DR. H. LOWENBURG, Philadelphia, stated that, although he has tried to find this relative area of dulness below and to the inner third of the left clavicle, he has been unable to satisfy himself of its existence. He asked Dr. Hamill to explain the reason why this relative area of dulness occurs.

DR. J. H. MCKEE, Philadelphia, said that he had been able to confirm in nearly every instance what Dr. Hamill said as to the dulness under the left clavicle and along the left border of the sternum. He also endorsed what he said of light percussion.

DR. A. W. FAIRBANKS, Boston, endorsed the value of auscultatory percussion. He has found it invaluable in the detection of slight variations in quality and pitch. He uses a Snofton stethoscope, unscrewing the hard rubber bell and using the small metal end. For children, especially, he has found this method exceedingly effective, particularly in detecting small areas of consolidation.

DR. ALFRED HAND, JR., Philadelphia, realized that he had a tendency to overlook the use of percussion to some extent. The results, he said, are certainly not so valuable as those obtained by auscultation. This is in large part due to the personal equation of the observer, the ability of different ears to recognize musical changes of pitch. He has often observed this in trying to elicit changes in the percussion note in hospital practice, by getting expressions of opinion from the resident physician and the nurse, and sometimes has had three different interpretations of the sound.

THE GROWTH OF LYMPHOSARCOMA IN DOGS.

SUMMARY OF RECENT OBSERVATIONS.*

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NEW YORK CITY.

During the last two years the Huntington Cancer Research Fund has been, in part, devoted to the study of a tumor which occurs naturally in dogs. This tumor, under the name of "infectious lymphosarcoma," has been the subject of investigation and observation at other laboratories during recent years, and because of its ease of transplantation it affords a splendid opportunity to study experimentally the tumor process in a large animal. Nearly all the opinions in regard to the nature of the growth support the belief that it is a neoplasm, and the term infectious has been applied to it, because the tumor occurs naturally on the genital organs and may be transmitted by coitus. The process has been called by a few pathologists, notably Bashford, an infectious granuloma, comparable in many respects to syphilis.

Very early in our study of the growth we realized the necessity of having additional information bearing on these points. Histologically there is no doubt of the tumor nature of the growth, but the most conclusive evidence was obtained by planting a series of thin slices of tumor tissue subcutaneously in dogs and removing these grafts after they had been in the new host one, two, three, six and fifteen days, respectively. The fate of the transplanted pieces was characteristic of tumor grafts. The inner portion degenerated and became necrotic, while the outer layer of cells continued to grow, and it is from their proliferation that the new tumor develops. Such behavior points to a sharp distinction between infectious processes and true neoplasms. From similar experiments Bashford concluded that the whole implanted tumor graft degenerated and became necrotic, and that the tumor in the new host came from the proliferation of the surrounding connective tissue cells. He is, therefore, convinced that the process is an infectious granuloma analogous to syphilis. Our own observations are directly opposed to his, and the collateral evidence strongly supports our belief in the neoplastic nature of the growth. It is conceded by all observers that the tumor may be transmitted by coitus, and this fact is vigorously urged by those who believe an infectious agent is the chief factor in the etiology. However, it is well known that coitus in the dog is often accompanied by abrasions of mucous membrane sufficient to permit the actual implantation of new cells. We have demonstrated experimentally that the tumor can be transplanted by the mere rubbing of the freshly cut tumor on an ulcerating or abraded surface. As opposed to the infectious theory is the experimental fact that all those means of comminution which destroy the integrity of the tumor cells prevent successful inoculations with the resulting products. Any means of filtration which removes the tumor cells, such as very thin paper through which erythrocytes will readily pass, likewise gives negative results on inoculation. The range of temperature to which the tumor tissue can be subjected and still give growth on reinoculation gives further evidence of the essential part taken by the living tumor cell. Since we have no evidence of a successful transfer being made except by means of a living tumor cell, we may conclude, on the basis of our present knowledge, that the process is not infectious in the sense that a micro-organism is the causal agent.

During the last year there has been a great deal of interest manifested in the suggestion that tumors may be caused by spiral organisms similar to *Spirochæta pallida* of syphilis. Dr. Ewing has made very careful search for these organisms in both the primary and the transplanted tumors in all conditions of their growth. The results have been negative, except in one instance, in which abundant organisms were found in the necrotic portions of a tumor which had a slight ulcerated area. Even the most malignant strains which give a growth of 90 per cent. did not show a single organism. Those forms found in the one tumor were in no way similar to those found in the mouse carcinoma, but resemble forms occasionally found in ulcerating areas. We have used two methods in planting the tumor, viz., by trocar and by subcutaneous injection of a salt solution emulsion of living tumor cells. With the trocar a small piece of tumor is introduced below the skin with very little trauma. There is a very considerable variation in the percentage of takes following these methods of planting. The emulsion method does not, in most cases, give as good results as implantation by trocar, and we have some animals that refused to grow the tumor by the former method, and later gave positive results with trocar plants. The matter of natural immunity is, therefore, to some extent, a relative one. The choice of the fluid for making the suspensions is not a matter of indifference, for we have found in a series of experiments in which the same tumor was suspended for one series of plants in salt solution and in another series in defibrinated blood previously heated to 56 for one-half hour, that we obtained a larger percentage of takes with the blood suspension, and the tumors that developed therefrom grew faster than those from the salt solution suspension. As far as our limited number of animals permits us to draw valid conclusions, we can confirm the observations made at the Buffalo Laboratory, that incubation increases the virulence. We find this is particularly true of the suspensions made in defibrinated inactivated blood. We can likewise confirm a very important observation likewise made for the first time at the Buffalo Laboratory in their studies of mouse carcinoma, viz., a certain percentage of the tumor animals recover spontaneously and are then immune to further implantation of a tumor of like virulence. The immunity is not absolute. For some purposes the dog is a more suitable animal to use in immunity experiments, because his general physical condition can be more accurately estimated. We find that an immune animal may again become susceptible by any process which would be likely to diminish his general resistance. We have found that animals either naturally or spontaneously immune may be successfully planted after suffering one or two very severe hemorrhages. Again, an animal may be immune to implantation when first received at the laboratory, but after living in the cages for a few months may be successfully planted. Ehrlich has put out a very doubtful theory of tumor immunity, based, in part, on the observation that an animal having a tumor already growing may not be reinoculable. At the Buffalo Laboratory a series of experiments has demonstrated immunity to these secondary implantations. In our work we have found no more evidence of immunity to

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* From the Huntington Fund for Cancer Research of the General Memorial Hospital. Work done at the Loomis Laboratory, Cornell University Medical College.

secondary plants than existed to primary plants. If an animal is growing a tumor well he can nearly always be successfully planted again from his own tumors. We have had one instance in which the primary plants were all regressing, while secondary plants were growing steadily. This whole question of immunity in experimentally cultivated tumors is of so great complexity of the tumor graft and the method of transplantation, and there are so many variable factors, such as virulence that at present we can safely say only that immunity is relative; that it may be either natural or acquired, and has thus far been developed experimentally only by the actual growth and regression of a tumor in a selected animal.

The precise nature of the immune factors is not yet understood and the facts are as yet too scanty to permit of very helpful theorizing. We wish, therefore, to put on record the following facts without discussing their bearing on current theories. From some of the experiments carried on in our laboratory which confirm in part these made elsewhere, we are inclined to believe that the blood may contain some expression of the immune condition of an animal, and, if so, the possibility of transferring this immunity to a second individual is open. We have exposed thin slices of freshly removed tumor to a varied environment, such as normal saline solution and defibrinated blood from both susceptible and immune animals, and our impression has been that immune blood is not as favorable a medium for the preservation of these cells as the saline solution or the susceptible blood. Further evidence that the serum from a recovered animal has a deleterious effect on tumor cells is found in the transplantation experiments at the Buffalo Laboratory with cell suspensions in salt solution, normal serum and recovered serum. A smaller percentage of takes was found in the case of the emulsions prepared with the recovered serum, a fact which can scarcely be explained otherwise than by supposing some injurious effect on the tumor cell during its exposure to the serum.

We have had some confirmation of this point and additional evidence that the blood contains immune factors which confer a passive immunity on a susceptible animal. We are indebted to the active cooperation of Dr. George W. Crile for valuable assistance in carrying out these experiments, the detailed results of which will appear later. Dr. Crile has transfused the whole blood from immune animals to animals with actively growing tumors, the latter having been bled prior to the transfusion, and we have seen following this operation a regression of the tumors in the susceptible animal. Such a result has not invariably followed, but if our observations on these experiments are to be summarized we may say that the beneficial results have varied with the condition of the donor and the amount of blood transfused. In one instance the donor was in a very poor physical condition, although his tumors had completely regressed. The dog to whom his blood was given showed no beneficial result whatever, his tumors continuing to grow rapidly. The donor, after the transfusion, was again planted with the tumor with positive results, all four plants taking. As a contrast to such an experiment, we may cite the transfusion from a naturally immune animal in splendid physical condition. In this case a very large amount of blood was exchanged, 600 c.c. having been withdrawn from the tumor animal and 1,500 c.c. having been taken from the donor. Following this transfusion the tumors regressed rapidly and the animal is now completely recovered.

In the beginning of its course the tumor which we have been studying runs a benign course, with little or no infiltration and with apparently no effect on the health of the animal. Later general metastases appear, the animal becomes cachectic and dies. The cachexia appears late in the course of the growth when there is a comparatively large amount of autolyzed tumor products capable of absorption. The method of origin of this cachexia has been the subject of investigation during the past year. Dr. Weil has found that the extracts from the tumor tissues have a marked hemolytic effect, and that particularly the normal saline extracts from necrotic tumors contain a very active hemolysin. We are inclined to interpret these results as meaning that the necrotic tumors contain substances toxic for normal body cells, this toxicity toward erythrocytes being expressed as a hemolytic effect.

We do not know why this tumor begins to grow, but we can readily understand how it may be transmitted from one host to another, and in neither its origin nor transmission have we any evidence of the action of a micro-organism. There is, therefore, no more reason for applying the term infectious to this process than exists in the case of any other tumor which may be transplanted, and, indeed, following such logic, normal epithelium should be considered infectious. The cause of the tumor will not be found until our knowledge of physiologic growth and development is more complete. So far as these facts can be applied to the human subject, they indicate that there is no reason to consider human tumors infectious to any greater extent than the tumors we have followed in this study of the dogs. It is possible that human tumors can be transplanted in the human species, but we can not argue therefrom that certain houses or water courses are sources of infection. Our efforts to find a direct cure for these tumors has been limited to the study of the mixed toxins advocated by Dr. Coley in the treatment of sarcoma. Dr. Tracy has carried out these experiments in addition to making a thorough study of the toxins of bacillus prodigiosus, the results of which are now in press. The outcome has been very interesting and demonstrates beyond doubt the value of the method. The study has likewise demonstrated the unstable equilibrium which the tumor cell has in comparison with normal cells, since a great variety of toxins affect these growths unfavorably. Apparently the tumor cell has a special function of growth enormously developed, but the means of defense have been sacrificed.

THE TREATMENT OF EXPERIMENTAL TUMORS WITH BACTERIAL TOXINS.*

S. P. BEEBE, M.D., AND MARTHA TRACY, M.D.
NEW YORK CITY.

The use of injections of the combined sterilized cultures of *Streptococcus* and the *Bacillus prodigiosus* in the treatment of inoperable sarcoma has acquired considerable prominence since its introduction by W. B. Coley of New York some fifteen years ago.

It is well known that intercurrent attacks of ery-

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† From the Huntington Fund for Cancer Research of the General Memorial Hospital. The laboratory work forming the basis of the report was done at the Loomis Laboratory, Cornell University, Medical College, New York.

spelas have been observed in a number of cases to exert a restraining and even curative influence on the course of malignant tumors, and investigators have endeavored by inoculation with streptococcus cultures to bring about artificially equally beneficent results. Roger of Paris, in experimenting on rabbits, believed that by an admixture of the *B. prodigiosus* with his streptococcus he could enhance the virulence of the latter cultures, and Coley[1] applied this idea to the treatment of sarcoma, beginning in 1892 a systematic clinical study of the therapeutic effect of such mixed toxins. The striking results attained in an increasing number of cases by this method of treatment have directed attention to the possible significance of the *B. prodigiosus* in the preparation, and have seemed to us to warrant an investigation of the subject from this point of view. Since, also, we have been able at the Loomis Laboratory to maintain by transplantation a strain of lymphosarcomas in dogs, we have had at hand material offering a valuable opportunity for experimental work of this sort.

It seemed of importance to study with some care the effect of inoculations, not only with the *B. prodigiosus*, but with other bacterial toxins as well, on the actively growing dog tumors, with the hope of determining the rationale of this method of treatment, and if possible placing it on a more scientific basis.

The observations to be reported briefly at this time have covered a period of one year, and, while much further study of the subject is desirable, the facts already established are of considerable interest.

The bacteria thus far used in the work are but four, the *B. prodigiosus*, the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus* and the *B. coli communis*. As these organisms exert their poisonous influence by means of so-called endotoxins the preparations used consisted, for the most part, of sterilized suspensions of the whole germ cells.

The toxicity of the streptococcus and of the colon bacillus has been well established and needs no comment here. The streptococcus used was obtained from a fatal case of septicemia, and no attempt was made to keep up its virulence by passing it through a series of animals. At first the organism was grown for three weeks in ordinary peptone broth, glycerin to the strength of 20 per cent. was then added, and a small piece of thymol as a preservative, and the suspension then heated to 75 C. (167 F.) for one hour. Later, in order to obtain a preparation which would be more powerful, bulk for bulk, than the above, the broth cultures were centrifugalized and the bacteria washed several times with sterile physiologic salt solution, in a very little of which they were finally suspended. To this now concentrated suspension, glycerin and thymol were added as before, and the mixture sterilized at 75 C. (167 F.).

The *Staphylococcus aureus* was from the laboratory stock, and was grown on agar for from 48 to 72 hours, was then rubbed off in salt solution and prepared as described above. The *B. coli communis* was also grown on agar and prepared as was the staphylococcus.

Fig. 1.—Dog 268. (Experiment 2.) Treated with suspension of *B. prodigiosus*. Measurements: A, May 13; B, May 22; C, June 1; D, June 15; E, July 15. Last trace of tumor gone July 22.

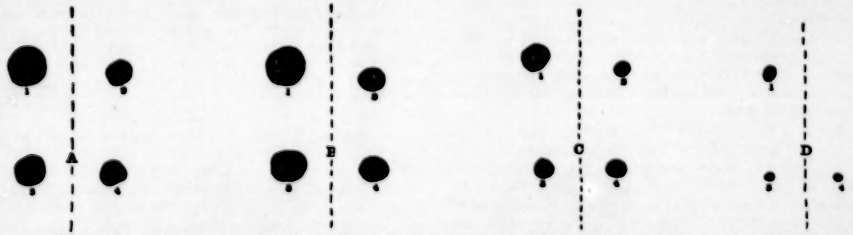

Fig. 2.—Dog 416. (Experiment 3.) Treated with suspension of *B. prodigiosus*. Measurements: A, June 22; B, June 28; C, July 15; D, July 30. Inoculation at no time into tumors. June 25 inoculation into left thigh; June 28 inoculation into right thigh; July 3 inoculation subcutaneously on abdomen; July 5 inoculation subcutaneously on abdomen.

The toxic qualities of the *B. prodigiosus* have not received much attention from investigators, and a preliminary study of this organism was undertaken and has recently been reported by one of us.[2] Some of the conclusions reached in that investigation may with advantage be restated briefly here. It was shown that "the bacterial cell of the *B. prodigiosus* contains highly toxic bodies capable in very small doses of causing death in animals;" that the "subcutaneous inoculation of a non-fatal dose of prodigiosus suspension produces a local lesion consisting of a central area of coagulation necrosis, surrounded by a zone of active round-cell infiltration;" that "autolysis at a temperature of 38 C. (100.4 F.) for two weeks set free from the germ cell soluble toxic substances which passed freely through a Berkefeld filter and which were capable of producing in animals toxic effects identical with those which had been

1. Amer. Jour. Med. Sci., March, 1906.

2. Tracy (M.): Jour. of Med. Research, May, 1907.

observed to follow inoculations with the whole germ substance; that a solution of these toxic substances could be divided chemically into two distinct fractions, and with each fraction could be correlated certain poisonous qualities, an alcohol-insoluble fraction being highly toxic, while an alcohol-soluble fraction was chiefly hemolytic in action."

In the light of this study it seemed advisable to use not only a sterilized suspension of the whole prodigiosus germ cells, prepared in a way similar to that given for the colon bacillus, but also preparations of the two soluble fractions described above. Inasmuch, however, as subcutaneous inoculations with these soluble fractions had failed in the preliminary experiments to produce any local lesion comparable to that caused by the whole prodigiosus germ cell, little effect on the tumor was to be expected from the use of these solutions, unless the action should prove to be a systemic one.

In order that the action of these preparations might be accurately compared, it was necessary to devise some method of measurement which could be used for the soluble fractions of the prodigiosus toxin as well as for the suspensions of the whole germs. One difficulty heretofore encountered in the use of the mixed toxins has been the varying power of the preparations and lack of any standard for measurement thereof. In the paper already referred to it was shown that this difficulty lay in the unequal growth of the prodigiosus broth cultures, a matter which it was exceedingly difficult if not impossible to control. It was found, however, that by cultivating the bacillus in large flasks on agar a luxurious growth was obtained, and the thick pellicle of bacteria could be removed practically free from contamination with the medium, and containing, therefore, no proteid but that of bacterial origin. An even suspension of such bacterial growth was made, using sterile physiologic salt solution, and the nitrogen content of this suspension determined by the Kjeldahl process. The dosage could then be expressed in milligrams of nitrogen.

It is, of course, obvious that such a method does not give the measurement of the actual toxic proteid, for it is impossible to say what part of the bacterial body is non-poisonous. Experimentation has shown, however, that such estimations of toxicity form a satisfactory working basis for dosage.

The suspensions of the *B. coli communis* and of the staphylococcus, both of which were grown on agar, could be measured in the same way. With the streptococcus, however, which grows more readily in broth, the proteid of the medium must enter into consideration; although in the concentrated streptococcus suspensions referred to above the repeated centrifugalization of the cultures with washing in physiologic salt solution removed this difficulty.

In order to bring the preparations of mixed streptococcus and prodigiosus toxins into line with this method of measurement, a definite quantity of prodigiosus suspension, of determined nitrogen content, was added to the broth culture of streptococcus, so that each c.cm. of the mixed product contained 2.5 mg. of prodigiosus nitrogen.[3]

The tumors treated were, as we have said, lymphosarcomas grown in dogs as a result of transplantation from a spontaneous tumor removed by operation at the veterinary hospital of Dr. T. G. Sherwood.

As soon as palpable tumors could be recognized, following such transplantations, the animals were kept under careful observation, and the growths measured at intervals, graphic records being kept of the condition. When the tumors had reached a considerable size, inoculation with the described bacterial suspensions was begun.

Up to the present time three animals have been

Fig. 3.—Dog 193. (Experiment 4.) Treated with suspension (sterilized broth culture) of streptococcus.* First inoculation into tumor 2, April 23; inoculation into tumor 1, April 26; reinoculation April 27 and 30; inoculation of tumor 1, May 1, inoculation into tumor 3, May 10; reinoculation into tumor 1, May 17, 18 and 20; reinoculation May 22, 27, 28 and 31 divided between tumors 1 and 3; reinoculation of tumor 3, June 12, 14 and 17; reinoculation of tumor 4, June 19 and 21; no further inoculation. Measurements: A, April 23; B, May 10; C, May 22; D, June 11; E, June 28; F, July 30.

Fig. 4.—Dog 123. (Experiment 5.) Treated with toxins of streptococcus and *B. prodigiosus*. Inoculation of tumor 1. February 11; reinoculated February 18, 21, 25 and 28; no inoculation into tumor 2 at any time. Measurements: A, February 11; B, February 25; C, February 28; D, March 12.

3. The formula of the mixed toxins of streptococcus and bacillus prodigiosus as now prepared for the use of Dr. Coley and others is as follows: To each 100 c.c. of three-weeks-old broth culture of streptococcus is added 30 c.c. of a suspension of *B. prodigiosus* containing 375 mg. of prodigiosus nitrogen. This suspension of prodigiosus is obtained by growth of the organism on agar, removal of the mass of bacteria after ten days, and rubbing it into a smooth suspension with physiologic salt solution. The nitrogen content of 1 c.c. of the suspension is determined and if too concentrated it is brought to the desired dilution by the addition of more salt solution. To this 130 c.c. of mixed bacterial suspension is then added 20 c.c. of glycerin, and after bottling, a small piece of thymol to each bottle. The whole is then sterilized at 75 C. (167 F.) for two hours.

treated with suspension of the whole prodigiosus germ cells, one with the alcohol-insoluble toxic fraction of prodigiosus filtrate, one with the alcohol-soluble hemolytic fraction of the same, one with the streptococcus suspension; three with suspensions of streptococcus and prodigiosus mixed, the so-called "mixed toxins," one with the staphylococcus suspension, and one with suspension of the colon bacillus. Briefly the clinical history of these animals is as follows:

CLINICAL HISTORIES.

Experiment 1.—Dog 1 at the beginning of treatment presented five abdominal tumors, the largest measuring 3½ by 2 inches. The first inoculation of a prodigiosus suspension was made May 9, 1906, 6 c.c. containing 6.0 mg. of prodigiosus proteid,[4] being injected into the large tumor, and 1 c.c. into each of the smaller growths. A severe chill and vomiting followed about an hour later, and in 3 hours the temperature had risen to 41.2 C. (106.4 F.). In 24 hours the tumors were softened, especially the large one, which was much swollen also. The dog was very sick, and its temperature did not go below 39.7 C. (103.6 F.). On the second day the large tumor showed distinct fluctuation, and on tapping with trocar and canula about 100 c.c. of semifluid necrotic tissue were removed. The smaller tumors were softened, but did not break down. For several days reaccumulations of fluid in the large tumor cavity were removed, and the dog's temperature remained high, varying between 38.6 C. (101.5 F.) and 39.4 C. (103 F.). A culture taken from the tumor discharge gave an active growth of prodigiosus, demonstrating the insufficient sterilization of the material used for inoculation, and indicating the possible existence of a prodigiosus septicemia to account for the temperature curve.

Further injections were made with boiled suspensions, at intervals of five or six days for about a month. A severe reaction, chill and high fever, followed each inoculation, and all the tumors broke down and discharged freely. The animal continued in bad condition, however, lost weight in spite of the fact that he ate a large amount of food, suffered severely with the mange, which we were unable to control, and was finally killed in July. At the time of death there still remained growing margins around the discharging tumor areas. At autopsy intra-abdominal metastatic growths were found.

4. Where any quantity of bacterial proteid is referred to the figure is obtained from the nitrogen content by multiplication with the usual factor, 6.25.

Fig. 5.—Dog. 180. (Experiment 6.) Treated with mixed toxins of streptococcus and *B. prodigiosus*. Inoculation of tumor 1, March 18; reinoculated March 21, 26, 27, 30, April 2, 4, 5, 8, 12, 20, 23, 24, May 10, 17, 18, 27, 28 and June 12. Shaded area in B represents softened tumor; in C shaded area represents inflammatory swelling masking outline of tumor. Tumor 4 in D was removed for histologic study. Measurements: A, March 18; B, March 30; C, April 7; D, April 17; E, April 26; F, June 15.

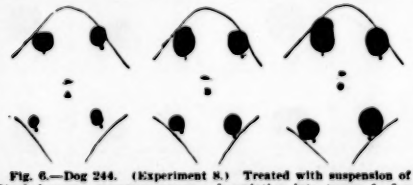

Fig. 6.—Dog 244. (Experiment 8.) Treated with suspension of *Staphylococcus pyogenes aureus*. Inoculation into tumor 1, June 25, 27, 28, July 3, 5, 8, 15, 17, 22. Tumors continued to grow. Measurements: A, June 22; B, July 6; C, July 30.

This preliminary experiment was suggestive in several points: In the first place it indicated that the *B. prodigiosus* itself exerts a powerful toxic action of some sort on the tumor cells. Secondly, the prompt reaction which followed the inoculations with the boiled suspension demonstrated that even this high temperature failed to injure those substances in the germ cell which were responsible for the local and systemic effect. And, finally, it was made clear that the treatment must not be pushed to the extent of reducing the general condition of the animal if good results were to be obtained.

Experiment 2.—Dog 268 (Fig. 1) presented four tumors, three of a diameter of 1½ to 2 inches, and one smaller. The first inoculation was made May 13, into one of the large tumors (Fig. 1, tumor 4). A well-sterilized thick suspension of prodigiosus was used, the dose of 0.1 c.c. containing 3.6 mg. of proteid material. The animal's temperature rose to 41 C. (105.6 F.) In 24 hours there was swelling and fluctuation of the inoculated tumor, and tapping with the trocar permitted the removel of considerable thick necrotic material. By the second day all inflammation had subsided and only the smallest possible bit of tumor was palpable. Two of the remaining tumors were softened and decreased in size. A second inoculation was given into one of the remaining tumors (Fig. 1, tumor 3), and this was repeated on alternate days for four more doses. The last dose was of 0.3 c.c., as some tolerance had been acquired and the smaller dose failed to produce any reaction. By May 27 all trace of the second tumor inoculated had disappeared and the two remaining were noticeably smaller. No further treatment was given, and the regression continued, until by July 22 no trace of any tumor remained.

Experiment 3.—Dog 416 (Fig. 2) was treated with prodigiosus suspensions injected at a distance from the four tumors, which were on the back. At no time was an inoculation made into or near any of the growths. Four treatments only were given, two of the injections being intramuscular, into the thighs, and two subcutaneous on the abdomen.

Following the first intramuscular injection the animal's temperature rose to 41.6 C. (107 F.). There was necrosis at the site of each injection, but rapid healing after the discharge of thick semifluid material. At the end of the second week of treatment the tumors first showed signs of regression, and a month later, with no further treatment, had disappeared completely.

The history of the two animals treated with the soluble toxins of prodigiosus may be given in a word. It was entirely negative. Repeated inoculations with the toxic fraction, in spite of a good general reaction as evidenced by a temperature of 40 C. (104 F.), failed to produce locally more than a slight inflammation which subsided without effect on the tumors. The hemolytic fraction in large doses failed to produce either general or local result. In both of these animals the tumors continued to grow steadily.

Experiment 4.—Dog 193 (Fig. 3) received inoculations with suspensions of the streptococcus. The animal presented four abdominal tumors, and during six weeks' treatment the two

tumors inoculated (Fig. 3, tumors 1 and 2) softened and regressed to a certain extent with comparatively little sloughing. The uninoculated tumors (Fig. 3, tumors 3 and 4) at first continued to grow, but later remained stationary for some weeks, or at most showed the slightest possible tendency to regression. June 11, six weeks after the beginning of treatment, what appeared to be a metastatic involvement of an inguinal lymphnode was noticed in the left groin. At this time the use of denser germ suspensions was begun and a slow but steady regression of all tumors except the metastatic growth set in. No treatment was given after June 22, and by July 15 only the groin tumor remained, and this had begun to decrease in size. The dose in this case was rapidly increased to 1 c.c. of the weaker, or 0.5 c.c. of the stronger suspension, at a single inoculation, but on no day did the temperature rise above 39.7 C. (103.6 F.), and rarely was there such active destruction of tumor tissue as occurred in the dogs cited above.

Experiment 5.—Dog 123 (Fig. 4) was inoculated with the mixed toxins, and is an example of a rapid and complete recovery of all tumors under treatment. It presented two abdominal growths and received during a period of two weeks, from February 11 to February 28, five inoculations with the mixed cultures of streptococcus and prodigiosus. Twice the injected tumor (Fig. 4, tumor 1) was tapped with a trocar and considerable necrotic tissue drained out. After the third injection the second tumor which was at no time inoculated, began to decrease in size, and by March 6 had entirely disappeared before the inflammatory reaction resulting from the inoculations into tumor 1 had entirely subsided. There has been no recurrence up to the present time. May 1 the animal was replanted with similar tumor tissue, and as no growth resulted, was once more planted six weeks later. There was no evidence of growth August 1, when the dog was bled to death in a transfusion experiment.

Experiment 6.—Dog 180 (Fig. 5) presents a similar history. The tumors at first yielded rapidly to the treatment with the mixed toxins, and by May 1, six weeks after inoculations were begun, there remained only a small part of tumor 1 (Fig. 5), into which the toxins had been injected. This remnant of indurated swelling resisted treatment for six weeks longer, but then gradually disappeared. A small regressing nodule (Fig. 5, D, tumor 4) was removed for histologic study, and was found to consist entirely of homogeneous necrotic tissue which failed to take the hematoxylin stain. The dog was in excellent condition throughout the treatment.

Experiment 7.—In dog 140 the tumors also yielded, though more slowly, to the treatment with the mixed toxins. After three months there remained of three actively growing tumors only a part of that one which had received the inoculations. For two months further injections seemed to produce no effect whatever. Doses were still given, however, at varying intervals, and finally a breaking up of the resistant fragment took place. Through sinuses which had persisted for some time, it was possible to press out fragments of tumor tissue as large as a small bean, and all that remained of the tumor was soon discharged in that way.

Experiment 8.—Dog. 244 (Fig. 6) was treated with suspensions of *Staphylococcus pyogenes aureus*. A rise of temperature to 40 C. (105 F.), or 40.6 C. (105 F.), followed nearly all of the nine inoculations given. The injections were made into one of the tumors (Fig. 6, tumor 1), but in spite of a slight localized necrosis, the growth inoculated as well as the others continued to grow steadily, and on August 3, five weeks after treatment was begun, showed no sign of any real regression.

Experiment 9.—Dog 260 (Fig. 7), the last animal treated, has received inoculations of *B. coli communis*. Six doses of bacterial suspension, 0.1 c.c. and later 0.2 c.c. at each dose have been injected into one of the four tumors (Fig. 7, tumor 4). The highest temperature reaction, and that on one occasion only, was to 41.1 C. (106 F.). Following the first inoculation, considerable necrotic tissue was removed by tapping, and from that time the regression of the inoculated tumor was slow but steady. Regression of the other tumors followed, and at the end of five weeks all had disappeared completely.

The accompanying charts (Figs 1 to 7, inclusive) give a graphic representation of the behavior of these tumors under treatment. It is noteworthy that the general health of the animals was at times much affected by the inoculations, and loss of body weight made it necessary to intermit the treatment until the physical condition was restored. If, on the other hand, the dosage was carefully regulated, the dogs frequently gained under treatment in spite of the presence of the softening and sloughing tumor.

The results of this preliminary study certainly demonstrate the destructive action exerted on tumor cells of this type by bacterial toxins. Such action, while chiefly local, is at the same time something more than this, for it is repeatedly observed that tumors at a distance from the site of injection undergo regression simultaneously with those inoculated, while in one instance the entire treatment was by inoculations at a distance from the tumors.

Fig. 7.—Dog. 260. (Experiment 9.) Treated with suspension of *B. coli communis*. Inoculation into tumor 4, May 14, 16, 17, 18, and 20. Inoculations were at no time made into any tumor but tumor 4. Measurements: A, May 10; B, May 16; C, May 27; D, June 1; E, June 15.

On the other hand, when the soluble toxins of prodigiosus were used, and thereby systemic effect only obtained, the toxins in soluble condition being apparently too rapidly removed from the site of inoculation to bring about any local reaction, no effect whatever was produced on the tumors.

One can only theorize concerning the mechanism of the reaction, systemic and local, when it does occur. It is conceivable that the tumor cells have acquired their power of uncontrolled multiplication at the expense of other properties, including that of self-defense. They may, therefore, be more susceptible to the destructive action of these chemical poisons than are the normal body cells.

Furthermore, the absorption of such dead tumor cells may give rise to some sort of antibody in the body fluids, thus raising the resistance of the animal against tumor cells not yet destroyed by the toxins.

Regarding the action of the mixed toxins, Coley states: "The fact that all of my own successes, as well as those of other surgeons, have been obtained with the combined toxins, not a single permanently successful

case having been observed from the use of the erysipelas toxin alone, goes far toward establishing the importance of the *B. prodigiosus.*" The experiments here outlined are certainly confirmatory of this opinion. It seems unquestionable that this bacillus, an organism which has been shown to possess highly toxic properties, exerts in itself a decidedly destructive influence on the cells of this particular tumor at least, and that its rôle in the effect produced by the mixed toxins is an active and independent one, and by no means merely that of enhancing the virulence of the streptococcus. It seems possible, however, that an equal bulk of any equally toxic organism would exert a similar destructive action.

We appreciate that the data presented at this time are insufficient to base any definite conclusions on, and we offer them only for what they are worth, believing, however, that, taken in connection with Coley's results in the human subject, they may be accepted as of some value.

THE EXPERIMENTAL PRODUCTION OF EPITHELIAL PROLIFERATION.*

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The artificial reproduction of conditions simulating those found in malignant growths has been attempted for a long time, but until very recently without any very definite results.

Since Virchow elaborated the irritation theory of origin of tumors many experiments have been made along that line. Brosch[1] painted the skin with a solution of paraffin and xylol and obtained a slight thickening and lengthening of the epithelial papillæ. Ribbert,[2] by means of repeated scratchings of the epithelium of the lower lip of a rabbit, produced a papillomatous outgrowth.

As is well known, there may be marked epithelial proliferation following in the course of chronic inflammation. Bernard Fischer[3] undertook to bring about this condition without causing any lesion in the overlying epidermis. Many substances were injected without result until agar was used. This caused some change in the connective tissue with the formation of giant cells. Olive oil was then used, and in the course of a few weeks, after repeated injections, there was a considerable increase in the thickness of the epithelium and in the length of the papillæ. The proliferation was, however, not atypical, and in no way resembled a carcinomatous change.

Fischer then added Scharlach R. to the olive oil, and this solution was then injected into a rabbit's ear. As a result of this there followed a most interesting condition. By repeating the injections two or three times on alternate days he found that in the course of a week or more the superficial epithelium began to thicken and become roughened and scaly. By the end of three weeks the following microscopic picture was observed: The squamous epithelium showed a marked increase in thickness, with a cornification of the outer stratum. Projecting into the deeper tissues were long and compound finger-like papillæ. These extensions were quite irregular in shape, and lying apparently free in the subcutaneous tissue were numerous cell nests. In many of these the central cells had undergone a very marked keratin degeneration with the formation of what appeared to be typical epithelial pearls.

Throughout the injected area were seen many clear spaces that in frozen section were found to be filled with the Scharlach oil. In some of these there were present cells around the periphery enclosing the foreign substance. There was also present a well-marked increase in the amount of connective tissue. The Scharlach oil penetrated throughout the lymph spaces, acted as a stimulant and gave rise to a condition simulating a non-infectious inflammation. Microscopically speaking, the picture so closely resembled that of a squamous epithelioma that it could not be differentiated from such.

From the results obtained, Fischer elaborated a theory in explanation of them. The proliferation could not be due to the mechanical irritation as such was ruled out by long-continued experiments in that line, all of which proved negative. For a period of months he painted the ear of a rabbit with the Scharlach oil without any results. In consequence of which he concluded that the proliferation of the epithelium following the injections is not the result of irritation, but is due to a chemotactic influence exerted by the Scharlach R. and olive oil. Similar results also followed the use of Sudan III and indophenol.

The oil penetrates the interstices of the tissue and the epithelium is then attracted to those places. It gradually surrounds the oil, forming a small cyst. As the oil is absorbed the epithelium still further proliferates until the foreign substance is entirely replaced. The epithelium then begins to degenerate and becomes converted into masses of keratin.

The opinion finally expressed by Fischer is that this injected material contains within it some substance that has the power of attracting epithelial cells. To this substance he gives the name "attraxin." To a certain extent it might be said to be related to Ehrlich's "Gewuchstoffe" or "Specific X-body," that according to his belief is necessary for the growth of malignant tumors.

As has been shown by Loeb in his experiments of parthenogenesis, it would seem that an alteration in the physico-chemical relations of the tissues could give rise to a proliferation of certain cells. Although Scharlach R. and the other substances used by Fischer are insoluble in water, yet they are to some extent soluble in the body juices, and therefore do not necessarily act entirely as insoluble bodies. It is possible that by their solution the power of the attraxin is exerted with the consequent proliferation of the epithelium.

That there may be specific attraxins would seem to be indicated by the fact that the injection of the Scharlach oil was unable to produce the epithelial changes anywhere else than in the skin, with possibly one exception. In some instances in both rabbits and dogs after injecting the above oil there were found small epithelial nests in the lungs. These were composed apparently of alveolar epithelium.

As a result of Fischer's article I undertook further experiments along the same line. Various animals were used, Belgian hares, guinea-pigs and white rats. The results obtained with the hares were the most satisfactory.

Nov. 7, 1906, I injected the external surface of the right ear of a large Belgian hare with about 4 minims

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

From the laboratory of the St. Louis Skin and Cancer Hospital.

1. Virchow Archiv., 1900, clvii, 32.
2. Geschwulstlehre, 1904, 352.
3. Münch. med. Wochschr., 1906, liii, 2042.

of a saturated solution of Sudan III in olive oil. Care was taken to introduce the needle as nearly parallel to the ear as possible so as to avoid any direct injury to the underlying cartilage. By the next day there was no marked swelling, but in the course of five days the area of the injection was very evidently thickened.

November 15 there was noticed a well-marked thickening in the entire region into which the oil extended. At the site of the injection the skin was plainly scaly. The same condition was also present on the inside of the ear in a corresponding situation. The area of thickening was quite sharply defined and could be readily seen by transmitted light. It apparently surrounded the central vessel.

Nine days after the single injection (November 16) the hare was anesthetized and the half of the ear in which was the involved portion was removed. At this time the left ear was injected. In the course of twelve days this ear showed an extensive area of thickening on the external surface. The injected area was irregular in shape, but well defined. There was no change on the inner surface of the ear. At the end of twenty days there was a slight ulceration on the inside of the ear opposite to the site of the injection. Four weeks from the time of the injection there was no scaling or thickening of the ear, and nothing except a slight reddening by transmitted light could be seen.

Fig. 1.—Normal ear of rabbit, × 115.

The wound of the right ear was completely healed, and by the end of two months neither ear showed any changes as results of the injections. At the present time, some six months later, the animal is apparently perfectly well and no epithelial disturbances are found anywhere.

A second hare was given four injections of Sudan oil at the same time, two in each ear, with the same macroscopic results. There was some thickening of the injected areas with slight scaling. The thickening gradually decreased, the skin became smooth, and by the end of two months there was no trace of the site of the injection other than a very diffuse reddening when the ear was held up to the light. A white rat and a guinea-pig were also injected and similar macroscopic lesions occupying practically the same period occurred.

The following is a brief description of the appearance of the ear removed from the rabbit:

Macroscopic Examination.—At the site of the injection there was an irregularly shaped area of considerable increase in thickness, about twice that of a normal ear. This thickening occurred quite abruptly, not gradually shading off. The major part of the increase was on the external surface of the ear on the side where the injection was made. There was, however, a small thickened area on the internal surface a little below the seat of the injection. The skin was a little rough and scaly over the involved portion, but there was no ulceration. On cutting into the thickened place there was seen a great number of minute red spots, places evidently where the Sudan oil was still retained within the interstices of the tissue. The ear was fixed in Zenker's fluid and portions were taken from apparently normal tissue down to and through the injected area. These pieces were imbedded in celloidin and stained with hematoxylin and eosin and with acid orcein for elastic tissue.

Microscopic Examination.—In the normal portions the surface epithelium was of the same thickness throughout and showed but slight extensions of the hair follicles. The underlying tissue, composed of rather dense connective tissue, contained a few small capillary vessels, some sebaceous glands and what looked like coil glands. As the injected area was reached marked differences from the above were noted. The subcutaneous tissue contained a great many clear spaces that varied greatly in size and shape. In the fresh state these openings were found to contain the Sudan oil. Many of them appeared to be enclosed by a distinct layer of cells which possessed long spindle-shaped nuclei. The impression given was that they were connective tissue cells that had been pushed aside and compressed by the injected oil. Another very conspicuous feature was the development of the epithelium (Fig. 2). Instead of being of a uniform thickness there were seen very long and complicated prolongations extending into the deeper structures. From their shape and from the fact that

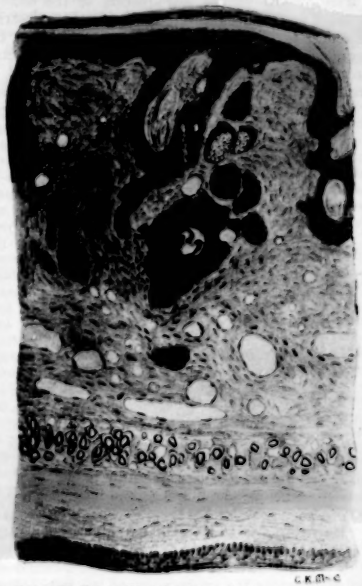

Fig. 2.—Epithelial proliferation in a rabbit's ear resulting, within nine days from the injection of Sudan oil, × 115.

portions of sebaceous glands were present it would seem that the epithelial proliferation originated from the hair follicles. Lying well down near the cartilage were found numerous apparently isolated masses of epithelium. These varied greatly in size and were quite irregular in their structure. They followed no definite arrangement excepting that in some of the nests the cells showed a distinct tendency toward a concentric formation, thus giving rise to the appearance of an epithelial pearl. This was further shown by the flattening of the cells, the presence of kerato-hyalin granules, the loss of the nuclei and the diffuse staining of the central portion by eosin.

Although the connection of the small masses of cells with the downgrowths of the surface epithelium could not be seen in any one section, yet when examined in sequence the relation could be traced out. There were places, however, where the appearance was given of epithelial cells having proliferated within the spaces that were formed by the introduction of the oil. No areas could be found, however, similar to those described by Fischer, those in which a layer of epithelial cells surrounded a mass of oil forming a cyst-like structure. Here and there were found small areas of round cell infiltration. No foreign body giant cells were seen. The amount of connective tissue was considerably in-

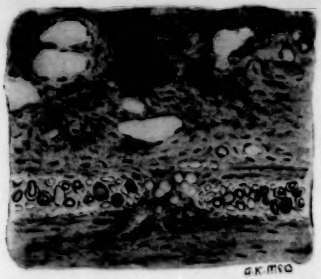

Fig. 3.—Fenestrum in cartilage of rabbit's ear, × 115.

creased and was evidently of new formation, as indicated by the presence of many spindle nuclei.

Fischer in his article mentions one instance in which there was an ingrowth of the epithelium into the cartilage. He regards it as being the result of an injury to the cartilage by the introduction of the hypodermic needle. In the instance described above I found what appealed to me as the explanation of the thickening on the side of the ear opposite to where the injection was made. In a number of the sections examined there were found distinct fenestra (Fig. 3) in the cartilage. It would seem probable that the Sudan oil on account of being under considerable pressure had been forced through a fenestrum. That the oil did pass from one side to the other is shown by the fact that there were found similar dilated spaces on the inside of the ear.

Such results as the above would apparently indicate the possibility of much information being acquired. Because if we can eventually reproduce malignant conditions we will be in a much better position to study cause and effect. Fischer's view as to the chemotactic action of these introduced bodies can be brought in harmony with certain other theories.

It could be used to some extent in support of Ribbert's theory of tumor formation: That by the introduction of the foreign material a separation of some cells from the parent epithelium might be brought about. The hair follicles from their structure would seem open to such a disturbance. The separated cells, acting as rests, would, under the chemotactic influence of the attraxin, undergo a proliferation, giving rise to the picture of atypical formation such as obtained in the experiments.

So far as Cohnheim's theory is concerned, the presence of these foreign substances might supply the necessary stimulus to cause embryonal rests to take on an active proliferation. There has, however, as yet been no proliferation brought about in epithelial structures other than the skin. It is rather difficult, therefore, to imagine that embryonal rests are so common in skin surfaces, or if present elsewhere that they should not react in a similar way.

As mentioned by Fischer, the reactions obtained in his experiments could be used to support the contention that neoplasms are brought about by parasites; the micro-organisms in their growth elaborating certain substances, attraxins, that exert a chemotactic influence on the surrounding cells. It would, however, be necessary to imagine different forms of living matter as the exciting causes of the many varieties of tumors.

Although these experiments open up a wide field of thought, they have not as yet been carried to the point where any definite conclusions can be drawn. If we can bring about such an atypical proliferation of the epithelium it would seem theoretically possible to continue the stimulus to the point of having a destructive growth. Hints of this appeared in the form of a slight ulceration that did occur in one instance, but with the exception of Fischer's case in which there was apparently an infiltration of the cartilage no such result has been obtained.

Further experiments are being carried out along these lies in the hope that greater advances may be made.

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DISCUSSION

ON PAPERS OF DRS. M'CONNELL, BEEBE AND TRACY.

PROF. J. G. ADAMI, Montreal, said that while Dr. Coley's work on the mixed toxins has not been entirely successful, nevertheless the results obtained in a number of instances have afforded so clear a demonstration of the reduction of the tumors by inoculation with these mixed toxins that all pathologists have been anxious to know more in regard to what is the exact meaning of the phenomenon. That erysipelas might lead to the disappearance of malignant growths was recognized by the old army surgeons at the beginning of the last century. Now the very careful observations made by Dr. Beebe and his coadjutors tell a little more, and their study of the relative value of the toxins of the streptococcus and prodigiosus on these lymphosarcomatous tumors is full of interest. The further and fuller confirmation of what had before been indicated, that it is not merely the streptococcus, but the prodigiosus that has active power, and the observations showing that the bacillus coli toxins have an almost equally strong effect, Dr. Adami said, suggest that there are toxins that can act on tumor cells and cause their necrosis.

In connection with Dr. Coley's work, time and again, there has not been absolute, complete cure of sarcomatous tumors; whereas, commonly great destruction of the tumor cells is brought about; nevertheless, too often, Dr. Adami continued, there comes a point at which the destruction goes no further; further inoculations seem to be of no effect, and gradually the tumor grows again. It is interesting to see that in the dog tumors apparently the same phenomenon occurs, the mass of the tumor being destroyed, but in a great number of the cases there remains a remnant of cells which becomes immunized to the toxin and which will go on growing until finally the animal succumbs. Dr. Adami referred to a recent paper by E. Ehrlich, in which the author brought forth a val-

uable suggestion. After employing trypan red for a time, the trypanosomes disappear from the blood. But as Thomas and several others have confirmed after a time the trypanosomes reappear. Ehrlich has shown that there are different chemical groups of these anilin bodies, groups that equally possess the power of arresting the trypanosomes, and that when a member of one group becomes ineffective, then the right procedure is to employ a member of some other group having a different composition. Dr. Adami stated that what one would suggest in connection with these observations of Dr. Coley and Dr. Beebe is, that having used toxins of one order to bring the tumor down to a certain point they should experiment with other toxins to see whether, for instance, alternating the prodigiosus with the coli, etc., using different toxins, one could not get rid of this remnant and so bring about complete cure. Although there are many obstructions in the way and progress is slow, Dr. Adami feels that the present is full of hope. One by one the difficulties are beginning to be overcome, and while we can not find parasites in malignant growths in general and are coming more and more to accept the cellular theory, we are entering into new territory and are beginning to realize its boundaries. The outlook for the future is hopeful; we can not but feel that the time must come when we will possess the solution of this great and most important problem, the arrest and cure of malignant growths.

DR. D. H. BERGEY, Philadelphia, said that the paper by Dr. McConnell would seem to indicate that one must look on tumor formation, as we are beginning to look on all forms of infection, as being really at bottom a chemical process; that these new growths of epithelial structures that have been brought about by Sudan III and Scharlach R are probably at bottom due to certain chemical stimulation of these cells, stimulation of such a mild character as to give rise to this series of results. In a similar way, no doubt, if chemical irritants of a more active nature had been employed the clinical results on the tissues would have been more grave and of an entirely different character.

In the experiments that Dr. Beebe and Dr. Tracy reported Dr. Bergey saw some very important points. He asked whether Dr. Beebe made definite attempts at immunizing animals with heated tumor cells; in other words, whether he could immunize his animals in the way we can with heated bacterial suspensions, and whether the immunity conferred in this way is identical with the immunity which is obtained in other ways. This, he said, would throw a very interesting side light on the whole process.

As to the effects of the so-called bacterial toxins, Dr. Bergey thought that it was not so much the action of the toxic principles produced by the bacteria, as shown by the results of toxins separated by alcohol and other methods, but no doubt the action was due to the various enzymes produced by these bacteria, the proteolytic, carbohydrate splitting, etc., that assist in breaking down the tumors. Reasoning along this line, Dr. Bergey thought that the results reached by these studies must be regarded as an acquired immunity, induced through the absorption of broken down material in these tumors. Here, again, there is evidence of immunity not conferred by the toxins, but active immunity developed in the animal itself from the necrosing tumors.

DR. WILILAM B. COLEY, New York City, reviewed the history of his method of treating sarcoma by means of the mixed toxins. The first case treated successfully in this way occurred in 1893. It was a large sarcoma of the abdominal wall, 7 inches by 4 inches in size, and involving the pelvis. This patient recovered entirely in four months.

Dr. Coley does not regard the toxins a cure for all cases of malignant tumors. He advocates it only in inoperable sarcoma, hopeless from any other point of view. One such case, a round-celled sarcoma, involving the vertebra, with total paralysis of the bowel, bladder and extremities, in which the patient had lost sixty pounds in weight, five years ago last February, was turned over to him. The treatment was continued four months. The patient got entirely well. He was able to go on crutches in June and July and discarded them in August. Dr. Coley has used the toxins in 388 case, in fifteen years, with 42 successful cases. Of these, 17 were round-celled sarcoma, 17 were spindle celled; in three no microscopic examination had been made.

In many of these cases the clinical diagnosis was confirmed by some of the best pathologists in the country, and in nearly all the cases the report rested, not on the opinion of one man, but of a considerable number. As to the permanence of results, 21 patients were well from 5 to 14 years, 26 from 3 to 14 years, 10 over 10 years. Recently Dr. Coley advocated the use of the toxins somewhat beyond the totally inoperable cases. In sarcoma of the long bones he now recommends a preliminary course of the toxins for a period of three or four weeks, with the idea of saving the limb. The result is that there are 13 patients at the present time so saved without operation. In the early part of his work with the mixed toxins, Dr. Coley often noticed great variation in the color of the preparation. In some cases the toxins were almost clear and in others deeply red, the deep red color indicating a luxuriant growth of the prodigiosus, and in some cases in which the deeply colored preparation was used, he obtained the best results. He then concluded that the prodigiosus had a value of its own. Dr. Tracy's work, he said, confirmed this idea. His work goes still further and proves that the toxins can be made by growing them separately, and we can in this way get something we could never get before, certainty of dose, but the toxins are a more dangerous as well as more efficient preparation. Dr. Coley has seen a temperature of 106 from one-fourth of a drop or a quarter of a minim of the mixed toxins. The injections may be made into the tumor or remote from the same. Dr. Tracy, he said, failed to bring out the point that in the human being the action is largely systemic. A case of round-celled sarcoma of the femur, involving two-thirds of the shaft, with extensive masses in the left pectoral region and in the ilio-lumbar region, in which the diagnosis was verified by Drs. Buxton and Dunham, disappeared entirely by injections made into the buttocks. The patient was well five years afterward. As a rule, Dr. Coley said, better results are obtained by injecting into the tumor, whenever possible, but there are a number of intraperitoneal cases on record, in which the growths subsided as a result of injections away from the tumor. Where it is not wise to make local injections, nearly as good results can be obtained by injecting elsewhere. The tumors disappear, just the same. There is increased leucocytosis, local and general, with coagulation necrosis of the tumor. It disappears by absorption, which may take a long time. In one of Dr. Coley's cases it took nearly a year, although the treatment was continued for but three to four months. The tumor subsided slowly, after the patient had returned to her home. Dr. Coley believes that a great deal of the success or failure of the treatment depends on the technic. People who have had uniform failures have been afraid of the toxins. They have been fearful of pushing them too far and have stopped just short of success. In one case, he used the same preparation as the physician who had failed, only in larger doses, and the patient got well and remained so for six years. This man was able to take an injection nearly every day, although the temperature was 104 or 105°, and he gained rapidly in weight. Why does the treatment fail in some cases? Dr. Coley believes this is explained by the assumption that every individual has a certain natural immunity to tumor infection, and where a tumor begins and grows, the natural immunity is not sufficient. By increasing this natural immunity sufficiently by giving the mixed toxins the patient is cured. In certain other cases the antagonistic effect of the toxins is sufficient only to control the tumor growth for a short time, and in these cases, although there is some diminution in size, this is only temporary, and after a few weeks the tumor continues to grow as before. He regards Dr. Tracy's demonstration that other toxins may be used, and Professor Adami's suggestion that one may succeed and another not, are valuable points. In cancer of the breast early operations raised the successes from utter failures to nearly 50 per cent. of cures. Agnew, after a long experience in surgery, said he had never cured a patient, but if everybody had taken his advice and no longer operated, we should not now be able to cure nearly 50 per cent.

DR. GUTHRIE MCCONNELL, St. Louis, in one case attempted

to find what effect the Sudan III would have on epithelial proliferation if it were injected with some inert substance. It is insoluble in water and salt solution. He made a suspension in distilled water, and by constant, repeated shakings was able to get it so minutely divided as to get it into a syringe and inject it into the ear of a rabbit. At the end of ten days there was no evidence of any epithelial proliferation, which would seem to show that the result was due to the Sudan III in a slightly soluble condition, and that it was the Sudan III and not the olive oil or other substance injected with it.

Dr. S. P. Beebe, New York City, has started to use already some other toxins than those that have been used so much, and he thinks that the immunity which apparently develops after a time, or a toleration to these two that have been used, does not mean that toleration will be exhibited toward other toxins of a different character. There seems to be some very distinct hope and promise in being able to start out with one toxin, get a certain definite result, and then continue the treatment with another. In regard to immunity to heated tumor cells, they have not thus far made any experiments along that line. While it might be worth while to do so, it would probably confirm the work that has been done elsewhere, which gave negative results; but with some other growths it is found that the tumor grows faster after previous inoculation with tumor extracts. They are trying to develop an immunity in the animal to its own proteids, a kind of immunity which has not been shown to exist heretofore. Dr. Beebe doubts that the enzymes are the effective agents in this action. He rather thinks it is the toxic effect which the bacilli have. Enzymes are very susceptible to heat, and this applies to the bacterial enzymes as well as to those from the body tissues. Beebe and Tracy found just as great effect, and in dog tumors more prompt and greater effect, if the bacterial suspension has been boiled for ten or fifteen minutes. That, he said, would eliminate the enzyme idea. One fact brought out by the observations on dogs is that one case in which there was complete recovery from tumors following the administration of the mixed toxins, a further implantation has not given growth. This, theoretically, is a very important point. Perhaps, practically not so important. The individual may not a second time be subjected to the same conditions that first produced the tumor. But in the fact that he is immune, a further fact is added to our tumor knowledge; it is not necessary that the tumor should regress by the body forces acting alone, but it may be helped by some outside agency, and the same result be produced finally.

Dr. Martha Tracy, New York City, thought that Dr. Coley's success in using the toxins to prevent a recurrence after operation would suggest that they have a systemic effect.

OSTEOPLASTIC OPERATIONS.*

PROF. D. KÜSTER.
MARBURG, GERMANY.

Let me thank you for your cordial and honorable invitation, which gives me the occasion to speak on a theme with which I have been occupied often and for a long time—osteoplastic operations.

We may divide the methods of operation which aim at remedying a defect of bone into three groups: First, the supplying flap is completely loosened from its natural connection and implanted into a new place; this method may be called grafting or incision. Second, the supplying flap remains in connection with the maternal ground by means of a nourishing bridge of tissues; it may exclusively be called transplantation. The methods of the third group are known under the name of temporary resection or replantation; the piece of bone is dislocated from the maternal ground only until the operation is finished.

All these groups contain important and noteworthy methods of operation.

FIRST GROUP. INCISIONS.

In 1825 Philipp von Walther,[1] the celebrated surgeon of Bonn, published an observation on the successful healing of a piece of skull, obtained by trephining and reimplanting. Only the under part of the piece was fixed, the upper part was loosened and ejected by suppuration. I do not know if such an attempt has been made later; but if so, surely without success. In 1888 I made a new trial in this manner, which succeeded perfectly. As half a year later the patient died of a kidney disease, I was able to obtain the calotte of skull (Fig. 1a and 1b). It shows the implanted piece only partly healed.

The manner of healing in such cases is exhibited by a good essay founded on experiments by my former assistant and friend, Prof. Arthur Barth;[2] he showed that the grafted piece mortifies aseptically and that from the margin of the bone wound a new fibrous tissue springs forth, which ossifies and slowly replaces the implanted bone under adaptation to the original form.

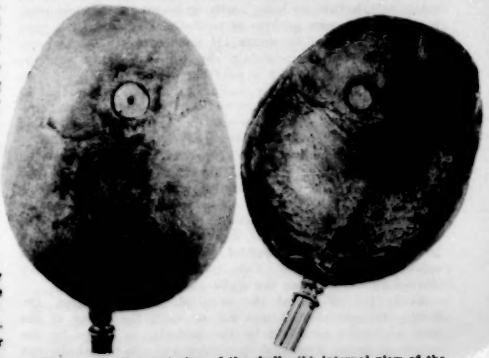

Fig. 1.—(a) External view of the skull; (b) internal view of the skull.

These experiments and their scientific explanation have made the process of healing intelligible in all cases of complete separation of tissues of the human body. They advanced the endeavors of restitution in the most various cases of osseous defects, the supplying material of which is taken, partly out of the body of the patient (Macewen and Keen implanted a hacked piece of the tibia), partly from other persons (pieces of bone after amputations), partly even from the skeletons of animals. Condition of success is complete asepsis, and the reproduction of bone is more sure, the more the grafted piece remains in connection with the periosteum.

My friend, Professor Heidenhain, in Worms, made recently a good application of this principle in a case of tumor of the right tibia in supplying the lost diaphysis of the tibia by splitting the sound tibia into two parts and grafting the one-half into a wound of the other side.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Wiedereinheilung der bei Trepanation ausgebohrter Knochentheile, Jour. f. Chir. u. Augenhk., 1821, II.

2. Histologische Befunde nach Knochenimplantationen. Verhandl. d. deutsch. Gesellschaft f. Chir., 1893, xxii; Osteoplastik in histologischer Beziehung, Ibid., 1894, xxiii.

The individual recovered with full power of walking (Figs. 2 and 3).

SECOND AND THIRD GROUPS. TRANSPLANTATIONS.

We distinguish permanent and temporary transplantations.

A. Permanent.—The first example of transplantation of flap containing bone and healing in a distant place is the method of the great Russian surgeon, Pirogoff, published in 1854.[3] It is, as you know, a low amputation of the leg, in which the loss of length is partly compensated by a flap of skin, soft tissue and bone, taken from the tuber calcanei. The operation is of fundamental importance, but after finding that the thin skin of the heel is little able to support the weight of the body in walking, a series of variations of the method have been devised. The most suitable is the operation of Professor Le Fort in Paris, who sawed through the leg and the calcaneus in a horizontal line so that the natural skin

Fig. 2.—Tibia before operation.

Fig. 3.—Showing result of operation.

of the sole remained as a walking surface. This excellent method, however, causes a considerable shortening of the leg, which may be easily avoided, as I am going to demonstrate.

In 1895 I published[4] for the first time the description of a new method, to which I afterward gave the name of "osteoplastic exarticulation in the foot-joint." The incision begins at the internal malleolus, goes forward and downward to the anterior margin of the navicular bone, passes the sole in transverse line and mounts to the external malleolus. From the end points of this incision a shorter flap is formed on the back of the foot. Now the foot joint is opened and from the posterior end of the astragalus the connections between the astragalus and calcaneus are separated. At last follows the exarticulation between calcaneus and cuboid bone. The calcaneus is then between the two malleoli, adapted and retained by sutures in this position. The shortening after healing only amounts to one centimeter, the patient needs no prosthetic shoe. It is very important that the unequal surfaces of the joint heal without mobility and remain fixed (Fig. 4).

Pirogoff's operation has been imitated on other bones. Szymanowski transplanted the sawed olecranon to the sawed humerus, and Gritti of Milan adapted the wounded posterior face of the patella to the sawed femur. The first method is forgotten for good reason; Gritti's operation is still s metimes performed.

An important form of permanent transplantation is König's[5] osteoplastic operation for healing large defects of the skull, published in 1890. They are covered in a very ingenious manner by a flap containing skin, periosteum and bone. The cicatrized skin covering the defect is cut out in the form of a pedunculated flap; a second flap of a little larger size, with the base on the opposite side, is so formed that one side line is partly the same as that of the first, leaving a spur of skin between the two flaps. The latter contains a thin bone plate. The flaps are then exchanged one with the other and fixed by sutures in the new place. After healing, the thin bone plate gives a firm covering of the defect. I have performed this operation several times, always with good results. Figure 5 shows the last patient I operated on for a defect in the forehead; only the scar of the primary wound makes a slight deformity, but the skull is firmly closed.

3. Osteoplastische Verlängerung der Unterschenkelknochen bei d. Exarticulation des Fusses. Klinische Chir., Leipsic, 1854.

4. Ein zweckmässiger Ersatz der Operation Le Forts, Festschrift des med.-chir. Friedrich-Wilhelmsinstitutes, Berlin, 1895. Zur osteoplastischen Exarticulation der Fusswurzel. Centrbl. f. Chir., 1897, No. 28; Zur osteoplastischen Exarticulation der Fusswurzel. Verhandl. d. deutsch. Gesellschaft f. Chir., 1901, xxx.

5. Der knöcherne Ersatz grosser Schädeldefecte, Centrbl. f. Chir., 1890, No. 27.

A very singular modification of this principle was make by the late Professor Schönborn at Würzburg. In a case of extensive defect of the forehead he took a large skin-periosteum-bone flap out of the hairy scalp; after healing the bone he reimplanted only the hairy skin to the primary place and the cicatrized skin to the forehead. This is an osteoplastic operation in intervals.

This example shows that the principle of bone transplantation allows many variations in practice.

B. Temporary Dislocations and Reimplantations (temporary resections).—The first temporary resection

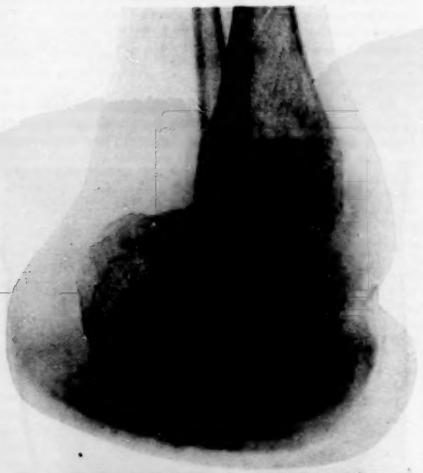

Fig. 4.—Showing result of Küster's osteoplastic operation on the foot.

Fig. 5.—Result of Koenig's osteoplastic operation for defects in the skull.

or the formation of a skin-periosteum-bone flap, which at the end of the interference is returned to its former place, is Langenbeck's[6] osteoplastic resection of the upper jaw, a description of which was published in 1861. It was intended for the extirpation of tumors behind the jaw. It seems that Langenbeck has been influenced by Pirogoff's operation; but as he does not speak of it, it is possible that he was unconscious of the intellectual connection of both ideas. The operation is seldom performed; I have done it only once. In the meantime it has been supplanted by more careful proceedings like the methods of Gussenhauer and Kocher. Nevertheless, it is scarcely probable that one will quite dispense with it in the future.

Under the influence of this method, as it seems, Kronlein of Zurich, Langenbeck's pupil, has devised the osteoplastic resection of the outer wall of the orbit, published in 1886,[7] which is acknowledged as an excellent means for the extirpation of all tumors of the orbit behind the eyeball. I can recommend the method after having operated in this manner three times with success.

But the greatest furtherance of the doctrine of osteoplastic resection was Wilhelm Wagner's[8] osteoplastic craniotomy, published in 1889, which at the same time gave a lasting impulse to the surgery of the brain. This operation makes it possible to lay bare the brain in a wide area by forming a very large skin-periosteum-bone flap, covering the defect by replacing the flap as soon as the interference with the brain is finished. I have no intention of participating in any degree in

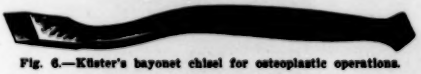

Fig. 6.—Küster's bayonet chisel for osteoplastic operations.

Fig. 7.—Prof. Küster's slide chisel for craniotomy; old form.

Fig. 8.—Prof. Küster's slide chisel for craniotomy; new form.

Wagner's great merits; but I may mention that in 1888 and 1889 I experimented in the same direction, together with my late assistant, Prof. Arthur Barth, and that I did the same operation. I did not publish the trials, however, before having found a quick method of opening the skull and meanwhile Wagner was the first on the field. I should not have mentioned these things had not two instruments, which I then constructed, rendered good services in many of my operations; I call them the bayonet-chisel and the slide-chisel. The first (Fig. 6) serves for chiseling off thin plates of bone and it is a handy tool for several osteoplastic operations; the second (Fig. 7) is the instrument with which I tried to form a large flap of the skull very quickly. But as I burst several skulls of cadavers, I did not think the chisel applicable to the living body. Recently I returned to this instrument (Fig. 8) a little modified, with which I perform the operation in the following manner: I

6. Die osteoplastische Resection des Oberkiefers. Deutsche Klinik., 1861.

7. Zur Pathologie u. operativen Behandlung der Dermoidcysten der Orbita. Beitr. z. klin. Chir., 1886, iv; also Domela-Nieuwenhuis: Die retrobulbäre Chirurgie der Orbita, ibid., xxvii.

8. Die temporäre Resection des Schädeldaches an Stelle der Trepanation. Centrbl. f. Chir., 1889, xvi.

cut out a great flap by the knife to the bone, push back the periosteum of the outer margin a short distance, perforate the skull with Ludeck's or Stille's fraise at three points, introduce the sled of my chisel into one of the pits and cut through the bone bridges. If an electric motor is at hand one may first saw a trench between the perforations, but the interior table is to be separated by the chisel. All this can be done at great speed.

APPLICATIONS OF THESE METHODS.

Under the title: "Ueber die Grund, salze der Behandlung von Citerungen in Starrwandigen Hohlen" (on the principles of treatment of suppuration in stiff-walled cavities) I published in 1889 an essay in which I recommended a broad opening of suppurating sinuses in the pleura, in the cavities of the forehead, upper jaw and mastoid process and proved the efficacy of the method in numerous cases. At first I made simple incisions to the bone, which I later changed in accordance with the principles of osteoplastic surgery to avoid deformities.

I am very glad to find that the principles of operation which I then stated have been the basis of the development of this part of otiatric science. Still it must be acknowledged that a great many improvements in technic and instruments have been added to the primary method. However, after demonstrating that the opening of the mastoid by a straight-lined incision often produces an ugly deformity in the shape of a deep cavity behind the ear, I began in 1895 to form an oblong flap with upper base out of the whole skin, periosteum and a thin layer of bone of the mastoid process. This flap is folded back, the antrum, and in grave suppurations also the tympanic cavity, is opened with the chisel, and after cleaning the field of operation the flap is reimplanted. The cavity under the flap is filled up by granulations and heals in a few weeks. I performed many of these operations and had cosmetically good results (Fig. 9). My publication of that time, however, has caused violent attacks by several ear surgeons. They said that the reimplanted flap must hinder the survey of the wound and that it must be impossible to observe

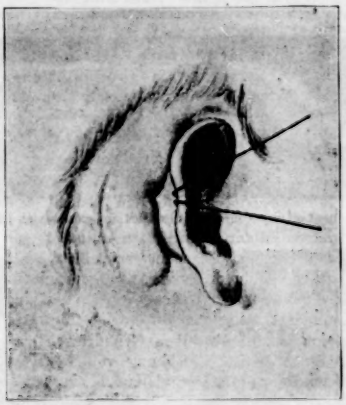

Fig. 9.—Healed osteoplastic chiseling of right mastoid.

Fig. 10.—Result of osteoplastic operation on right frontal sinus.

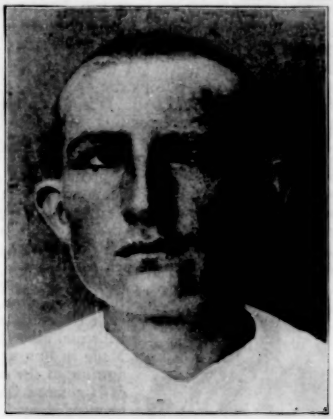

Fig. 11.—Exostoses eburnea of the left frontal sinus; before operation.

Fig. 12.—Same patient as in Figure 11; after operation for exostosis on the left frontal sinus.

the condition of the disease. I reply that the latter may be judged better without looking into the open wound, as this would not be without danger for the life of the bone. A continuous suppuration indicates the persistence of the disease and requires the re-examination of the wound by lifting the flap. In the majority of cases I saw a prompt and persistent healing in a few weeks. Further, my adversaries said that the straight-lined incision gives the same cosmetic results; meanwhile I and other surgeons have been obliged to cover by plastic operations very ugly holes behind the ear made by ear specialists. Such a result is prevented by forming a flap even without bone; but the normal vault is only to be obtained by osteoplastic operation.

I changed the simple chiseling of the maxillary antrum by forming a little flap out of the mucous membrane and periosteum, into an osteoplastic operation, by adding a bone plate of the front wall. It is always necessary to make the opening corresponding with the deepest point of the antrum. The incision, beginning at the anterior margin of the first premolar tooth, reaches to the posterior margin of the second premolar and nearly touches the under margin of the mucous membrane. With a small chisel the bony sinus is opened, giving room to turn the flap upward. Then the surgeon is able to examine the cavity with a finger and to discover in several cases the causes of disease such as dislocated teeth, carious roots, drainage tubes, forgotten after earlier operations, rifle balls and other things. Made in this way, the opening of the antrum of Highmore, first recommended by Desault in 1897, gives the best results, better than Cooper's perforation of an alveole or Mikulicz's perforation from the middle meatus. In all persons on whom I operated in this manner the wound healed perfectly.

Fig. 13.—Exostosis removed from patient in Figures 11 and 12.

For about twelve years I have also opened the frontal sinus osteoplastically. It must be emphasized that here the consideration of the cosmetic result divides the question, for the simple chiseling out of a part of the anterior wall of this cavity gives an unsightly pit in the forehead. The first patient on whom I operated in this manner had a cancer of the frontal skin and bone; therefore, I had to take away the whole anterior wall of the sinus. I covered the deficiency with a large skin-periosteum-bone flap from the neighboring forehead, and saw it heal by first intention.

The usual indication for interfering is suppuration in the sinus; then I outline a horseshoe-shaped flap containing the anterior bony wall of the sinus with superior base. After folding back the flap and restoring the meatus to the nasal cavity, the flap is fixed in its former place by sutures and the sinus drained for a fortnight through the nose. The small deformity which remains is to be seen on a photograph of one of my cases. Figures 10 and 11 are two photographs of a patient in whom I opened the sinus very largely for an exostosis of enormous size exclusively involving the sinus eburnea. I show the patient before and after operation and the tumor which I extirpated.

My late assistant and friend, Professor Barth of Danzig published[9] in 1898 a new method of osteoplastic operation of the frontal sinus. He makes an incision at the side of the nose, chisels subcutaneously through the base of the nasal bones, dislocates them, opens the mucous membrane of the sinus, and makes a large way between the latter and the nose by chiseling off the bone in the upper parts of the nose. I have not yet had the opportunity to prove the method.

CONCLUSIONS.

There are still other parts of the human body on which one has tried to perform osteoplastic operations.

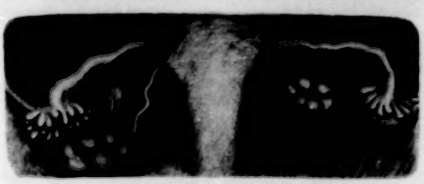

Fig. 1.—Left ovary partially prolapsed and the ovarian ligament greatly elongated.

Fig. 2.—The broad ligament has been put on a stretch. The slit or "button-hole" has been made between the tube and the round ligament. The ovary can be seen on the posterior surface of the broad ligament, ready to be transposed.

Fig. 3.—The ovary has been passed through the slit and rests on the anterior surface of the broad ligament. It has been fastened by sutures. The round ligament and the infundibulo-pelvic ligament have been shortened.

ILLUSTRATING ARTICLE BY DR. GEORGE GRAY WARD, JR.

As such I mention Lucke's osteoplastic chiseling of osteomyelitic foci and necrosis, which gives a very good form to the bone, but without shortening the time for healing. Besides I want to mention the trials of occluding great ruptures by a bone plate taken from the pelvis, and finally the osteoplastic chiseling of the vertebral channel. All these proceedings have not yet developed fixed methods, so it may be sufficient to have named them.

The summary which I have tried to give on the question of osteoplastic surgery is intended to demonstrate

9. Zur Operation des Stirnhöhlenempyems. Verhandl. d. deutsch. Gesellschaft f. Chir., 1898, xxvii.

that osteoplastics in general, and the transplantation of pedunculated flaps in particular, have given very satisfactory results. These are: a better survey and accessibility of the field of operation, avoidance of grave and persistent interference with the health, and, finally, avoidance or diminution of deformities up to a very light degree.

PROLAPSE OF THE OVARY AND ITS TREATMENT.*

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Prolapse of the ovary, in view of its being a not infrequent and important cause of misery and suffering, deserves more consideration at the hands of authors than it usually receives in the majority of the present-day text-books on gynecology. Many give but a few lines, touching on the condition and its treatment in a very superficial manner, and some do not mention it at all. In the days when it was a matter of grave import to open the abdominal cavity, there was no remedy other than attempts at reposition of the ovary, bimanually or by posture, and these efforts were signal failures, so far as permanent relief was concerned. In former days, therefore, there was little to be said on the matter of treatment, except to state that in those cases where life became unendurable, it was justifiable to open the abdomen and to remove the offending organ. To-day, however, there seems no valid reason why more attention should not be given to this painful condition, unless it be that present authorities differ as to the existence of this trouble or as to its importance. In view of the many recorded observations on this lesion of the ovary, which have been made for years past by gynecologists of the highest repute and by men known as careful observers, it perhaps seems strange to offer the suggestion that authorities to-day are not all in accord in their views on ovarian prolapse. Yet but a few weeks ago I was much surprised to hear one of the prominent gynecologists of this country say, in answer to my inquiry as to what was his method of dealing with these cases, that he really could not say, as he never met the condition *per se*, and that he thought the ovarian pain was dependent on circulatory disturbances, and not to be cured by restoring the ovary to its former position. Likewise, in a paper entitled "The Fetich of the Ovary," read before the American Gynecological Society in 1906 by Dr. Ely Van De Warker,[1] the following statement appears:

> Great importance was given at one time to prolapse of the ovary as a source of pelvic disturbances. Many yet so believed to the extent of opening the abdomen to suture the organ to what they regard as a normal position. . . . So little disturbance is caused by the descent of the ovary into Douglas' fossa that I believe it is better let alone. . . . If, however, the altered position of the ovary from its approximate normal, apparently gives rise to symptoms, it is due to the condition of the parts about the organs.

Dr. G. E. Herman,[2] in a discussion on a paper by Dr. Bonney before the Obstetrical Society of London in 1906, said he knew of no evidence that change in the position of a healthy ovary made it tender. He stated that tenderness in these ovaries is due to neurasthenia and that after rest and proper diet, etc., the tenderness disappears with the ovaries still prolapsed.

I mention these three instances merely to show that there is some divergence of opinion as to the importance of the dislocation of the ovary as a cause of suffering. I can not agree with these opinions. Certainly we see many cases in which a prolapsed ovary gives rise to no symptoms that can be referable to that organ, but, on the other hand, it is hard for me to appreciate how any one coming in contact with a gynecologic practice of any size, be it among hospital or private patients, can fail to see typical cases of a displaced ovary, unquestionably palpable in a prolapsed position, which palpation causes the typical pain complained of and which frequently renders coitus impossible and defecation a source of agony. I also believe that it is indisputable that those who have operated on these patients by restoring the ovary to its former place, or by removing it, have given complete relief to a chronic invalid.

Prolapse of the ovary with symptoms was described as occurring with retroversion of the uterus as long ago as 1850 by Rigby.[3] Storer, Warner and Blake[4] called attention to the condition before the Gynecological Society of Boston in 1872. Skene[5] read a paper on prolapsed ovaries before the New York Obstetrical Society in 1878. In 1879 Paul F. Mundé[6] presented a paper before the American Gynecological Society on "Prolapse of the Ovaries" that attracted widespread attention and discussion to the subject, and which did much toward awakening the profession to a proper appreciation and understanding of the disease.

Although the symptomatology and pathology were well worked out at this period, little progress was made in the way of relieving the distressing suffering. Efforts were all directed to local treatment, *per vaginam*, to relieve the congestion and pain of the tender organ. The ovary was lifted up with tampons soaked in glycerin, etc., and Mundé devised a pessary with the idea of holding up the prolapsed organ. Postural treatment was really the only rational procedure advised and that, of course, was but a temporary expedient. At that time, opening the abdomen was too serious a matter to be thought of, unless the patient chose the grave risk rather than endure her suffering.

In 1886, F. Imlach[7] suggested fixing the ovary by suture in its proper position. Since that time numerous surgeons have devised ways of fastening the ovary "higher up" and have written on the subject, notably Sänger,[8] Hirst[9] Goldspohn[10] and others. And recent contributions have been made by Gardner,[11] Bonney,[2] Beyea, [12] Mauclaire[13] and Barrows.[14]

Prolapse of the ovary may be divided into two classes: Those in which the ovary is prolapsed without an accompanying retrodisplacement of the uterus and those which

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

1. Trans. Amer. Gynecol. Soc., 1906.
2. Discussion, Lancet, Lond., 1906, ii, 1717-19.
3. Medical Times, 1850.
4. Jour. of Gynecol. Soc. of Boston, 1872.
5. Amer. Jour. of Obstet., April, 1879, 342.
6. Trans. Amer. Gynecol. Soc., 1879, iv, 164.
7. British Gynecol. Jour., i, 375.
8. Centralblatt f. Gynäk., No. 9, 1896, 241.
9. Discussion, Section on Gynec., College of Phys. of Phila., Feb. 18, 1897, Amer. Jour. Obstet., 1897.
10. Amer. Jour. of Surgery and Gynec., May, 1899.
11. Amer. Jour. Obstet., 1906, 807-11.
12. Amer. Med., June 28, 1902.
13. Prolapsus Ovariens Douloureux Traites par l'Hysteronexie et la Transposition Ovarienne Antéligamentaire, La Semaine Gynecologique, Sept. 1 and 8, 1903.
14. Medical Record, Oct. 15, 1904.

accompany such displacements and are the result of it. Both varieties may be complicated by the presence of adhesions binding the ovary in its abnormal position and rendering postural treatment out of the question.

The degree of prolapse may naturally be variable, but for practical purposes two degrees are sufficient: partial prolapse, in which the ovary rests on the so-called "retro-ovarian shelf" of Polk (or fovia retro-ovarica of Waldeyer) and complete prolapse in which the organ is resting actually on the floor of the cul-de-sac of Douglas.

Waldeyer[15] describes the normal position of the ovary as resting approximately in the obturator fossa, being suspended against the laferal wall of the pelvis by the suspensory ligament attached to its upper or outer pole, with its long diameter parallel to that of the body in the erect posture, the ovarian ligament proper connecting the lower or inner pole to the horn of the uterus, and by its hilum, which has a sessile insertion, into the upper posterior surface of the broad ligament. The ovary is, therefore, suspended as far away as possible from the median line of the body, but in conditions of prolapse, owing to slackness of the infundibulopelvic ligament, the ovary falls downward and inward toward the median line and becomes suspended by the ovarian ligament with the inner pole now uppermost.

According to Imlach, the ovaries are suspended as described by Waldeyer by the infundibulopelvic ligaments, only in nuliparæ, but after childbirth he states that, on account of the relaxation of these ligaments, the inner poles are uppermost, as the ovaries hang then by the ovarian ligaments.

Sänger states that the ovary rolls inward during its descensus and thus produces a torsion of the hilum with consequent venous obstruction.

The left ovary is more frequently prolapsed than the right, or, if both are prolapsed, to a greater degree. This is the observation of nearly all observers, although Barrows states the reverse opinion. This is generally conceded to be due to the differences in the venous circulation on the left side and to the passage of feces down the sigmoid. The left ovary is also more hypertrophied during pregnancy than the right, and consequently is apt to be the heavier.

According to Goldspohn, in 95 per cent. of prolapsed ovaries there is a retroverted uterus. Hanks[15] states that in 33 per cent. of all uterine displacements prolapse of the ovaries is present.

The prolapsed ovary may or may not be of itself the seat of disease. It is logical to expect to find chronic inflammatory changes in the organ where the malposition has given rise to a long-continued congestion. Therefore, chronic cystic degenerative changes and increased connective tissue are frequent accompaniments. More often, perhaps, a condition of peri-oöphoritis is observed, where the ovary has been surrounded by exudate and subsequent adhesions have formed. These inflammatory changes may, of course, have progressed so far as practically to destroy the organ and give no choice to the operator but extirpation.

Whether the inflammatory changes present in a displaced ovary are the result of the prolapse, or the prolapse is a result of the disease of the ovary, matters little, although it may be an interesting point for discussion. The fact remains that the inflamed organ is irritated and made more tender by reason of its malposition, predisposing it to traumatism from the passage of fecal masses and during coitus.

15. See in article by Goldspohn, note 10, preceding.

The causes of ovarian prolapse may be stated to be any condition which predisposes to relaxation of the ovarian supports and to increase in the weight of the organ.

Undoubtedly the most frequent and, therefore, important cause is subinvolution following labor or abortion. According to Hennig,[16] who prepared tables from accurate measurements, the ovary is largest just after parturition, and, therefore, any failure in the process of involution would result in the ovary being larger and heavier than under normal circumstances.

Goodell[17] pointed out the frequency of the condition in thin patients with relaxed abdominal walls, and I have frequently observed a typical prolapse of the ovary with the characteristic symptoms in cases of general enteroptosis with relaxation of the supports of all the abdominal organs, and where we find the pelvic veins in a condition of venous engorgement or passive congestion. These patients are usually thin, anemic women with flabby muscles.

Bonney calls attention to the fact that Nature has provided all pedunculated organs, such as the liver, spleen, kidneys and testicles with a device for the prevention of dragging on their neuro-vascular pedicle. And likewise the ovary has been supplied with its ovarian and infundibulopelvic ligaments to support the weight of the organ and prevent its dragging on the hilum at its sessile attachment, where the tissues are soft and in which run the nerves and vessels.

Habitual constipation, by causing straining at stool and the passage downward of large masses of hardened feces which distend the sigmoid and rectum, undoubtedly contributes to an abnormal descensus of the ovary, if its supports are unduly relaxed.

Any pathologic process or growth producing an increased weight of the ovary may be the cause of the prolapse.

Prolapse of the ovary, the common accompaniment of uterine retrodisplacement, is obviously a result of the malposition of the uterus as a rule, and, therefore, the etiology is that of retroversion. It is important, however, to realize that there are cases of retroversion with prolapsed ovaries where the ovarian supports are elongated and relaxed, and where simply restoring the uterus to its normal position will not overcome the ovarian prolapse. These are the cases of uterine displacement which have not been benefited by operation, the existence of the prolapsed ovaries having been overlooked. Bonney believes that most of the symptoms of retroversion are due to prolapsed ovaries and makes the point that the ovary drags on the hilum even though it is lifted up with the replaced uterus, if the ovarian ligaments are elongated.

Goldspohn states that the general average good health during subsequent years in cases of retrodisplacement in patients on whom he operated, securing the ovaries in a normal position, is much better than in cases in which the uterus alone was operated on.

It is a general observation that many patients with ovarian prolapse exhibit no special symptoms by reason of the displacement. In these cases, I believe the ovary is not in itself diseased and that it is not crowded or pressed on in its low position, owing to a roomy pelvis or shallow cul-de-sac and an empty rectum. It is much less likely to be subject to pressure or to be sensitive if it is in a state of partial prolapse only. Should the ovary

16. Der Catarrh der inneren Weibl. Geschlects-theile, Leipsig, 1870.

17. Goodell: Discussion on Mundé's paper, see note 6, preceding.

be the seat of chronic oöphoritis or peri-oöphoritis, the displacement is almost always a painful one; that is, it is more painful and has additional symptoms than if the same ovary was not prolapsed. The symptoms are often combined with those of a retroverted or subinvoluted uterus or with chronic oöphoritis.

Pain is the chief and characteristic symptom of a prolapsed ovary, and it is increased during menstruation, on walking, riding, standing, and even sitting. It is usually relieved by the recumbent posture. Coitus is often impossible on account of the severe internal dyspareunia. Defecation, especially if constipation exists, gives very characteristic pain. This pain often comes on with the filling of the rectum and during the passage of hard, fecal masses, is agonizing, and accompanied with a feeling of collapse or syncope and profuse perspiration and nausea. In a modified degree, it may continue for several hours after the defecation.

The above picture is almost pathognomonic.

This ovarian pain and tenderness is similar to that of the testicle produced by traumatism or otherwise. It may radiate from deep in the pelvis to the sacrum, rectum, hips or down the thighs. It often radiates along the course of the genitocrural nerve. As might be expected, reflex neuroses are often present. Undoubtedly a painful prolapsed ovary can be the cause of abortion.

Mundé has seen attacks of epilepsy and hysteria associated with the pain of ovarian prolapse, and Gardner mentions a case of marked ovarian dysmenorrhea which developed violent hysterical convulsions, lasting 10 to 20 minutes, always preceded by the pain. Both ovaries were in the cul-de-sac and, when operated on by shortening the ovarian supports, resulted in a perfect cure. Gardner has observed a very characteristic symptom in these cases, which he has not seen in any other pelvic lesion. It is severe paroxysmal intermenstrual pain in the pelvis. This pain comes on two to fourteen days before or after the periods, but is usually very constant in its relation in time to the period for each case.

With the foregoing symptoms, the diagnosis is made by bimanual palpation. If partially prolapsed, the displaced organ is felt through the lateral fornix of the vagina, as though resting on its vault. If completely prolapsed, it is felt through the posterior fornix, in the cul-de-sac. If not adherent it slips away from the advancing finger, and if pressed on the characteristic pain is elicited. Rectal touch, while drawing the uterus down with a tenaculum, will often render the ovary more accessible to palpation. It must be differentiated from a retroflexed uterus, a fibroid, or a fecal mass.

Non-operative treatment holds out little chance of success unless the trouble is very recent and due to subinvolution or accompanies a recent displacement of the uterus.

Posture is undoubtedly the most valuable method of reposition of the ovary. The knee-chest position for five minutes twice daily and followed by sleeping in the Sims' posture should be diligently practiced. Also the usual methods for favoring involution, as very hot astringent douches, glycerin tampons to deplete and thus to relieve congestion, with attention to proper feeding, gentle open-air exercise, tonics, regulation of the bowels (always using the bed pan) massage, etc., to tone up the muscular system and the prohibition of coitus, are in order. Any attempts to hold up the ovary by tampons, pessaries and the like, I believe, are a waste of time and frequently an additional source of irritation to the ovary. The use of a retroversion pessary to maintain the proper position of the uterus may be successful, provided the ligaments of the ovaries are not elongated. The pessary is only of use, therefore, in those cases in which the descent of the ovaries is entirely dependent on a displaced uterus. The cases that can be benefited by such local measures are so rare that practically operative treatment is mandatory.

Operative treatment formerly consisted of ovariotomy, and many organs that in no way were sufficiently diseased to necessitate their sacrifice were ruthlessly removed. If both ovaries were prolapsed, this was a serious matter, if the patient was not approaching the menopause.

In the light of modern pathology, a prolapsed ovary is not sufficiently diseased, as a rule, to require extirpation. It is usually in a state of passive congestion and edema, with probably some slight cystic formation. A restoration to its proper plane, thus removing it from irritation and traumatism and restoring its normal circulation, suffices to allow of its return to a physiologic condition.

To F. Imlach seems to belong the credit of first suggesting conservation of the displaced organ by fixing the ovary in its normal plane. In February, 1886, in a very able article entitled "The Treatment of Prolapsed Ovaries by Oöphorrhaphy," read before the British Gynecological Society, he protested against the then prevalent idea of wholesale removal of ovaries when diseased, and made a strong argument for conservatism. He advocated the suture of the hilum of the ovary to the relaxed infundibulopelvic ligament near the brim and termed the operation "oöphorrhaphy." He reported 14 patients successfully cured, but was severely criticised by Bantock and others as being too radical.

Sänger, in 1896, advocated taking up the slack in the infundibulopelvic ligament by passing a suture near the tubal end of the ligament and suturing it to the peritoneum at the pelvic brim or to the psoas muscle. Sänger suggests the names "adnexopexy," "oöphoropexy," or, more properly, "oöphoropeliopexy" for this operation. According to His,[18] the infundibulopelvic ligament is the most important support of the ovary, and its relaxation is a prominent factor in prolapse of the organ.

This operation of Imlach and Sänger would seem to be the one most generally in use to-day. Hirst appears to have devised this method independently of Sänger, about the same time, and to have combined it with suspension of the uterus. Goldspohn has done this operation through the inguinal canals.

Gardner, of Baltimore, shortens the ovarian ligament by suturing it to the posterior and outer surface of the uterus with two sutures. Victor Bonney, of England, does the same thing by first tying his suture on the posterior fundus uteri and then, passing it as a purse-string through and through the ovarian ligament, puckers it and thus shortens it. Gilliam suggests attaching the ovarian ligament to the proximal portion of the round ligament and then to shorten the round ligaments after his well-known method, which lifts up the broad ligaments as well.

Mauclaire[19] suggested, in 1903, the transposition of the prolapsed ovary to the anterior surface of the broad ligament through an incision or "buttonhole," and the fimbriated end of the tube was passed over the top of the infundibulopelvic ligament and fastened near the ovary by a suture in order to favor impregnation. This operation was to be accompanied by a hysteropexy if the uterus was retroverted.

18. His: See article by Beyer, note 12, preceding.

He had done several operations at that time and reported two with cures, stating that the position of the ovaries on the anterior surface of the broad ligament seemed to make no difference as to function in any way.

Later, in 1905, he reported[19] seven cases. He states that he did his first operation in 1901. Dr. Charles C. Barrows,[20] New York, advanced this same operation in 1904 and reported 12 cases, with excellent results. He devised this procedure of the transposition of the ovary to the anterior surface of the broad ligament independently of Mauclaire, and reported his first case to the New York Clinical Society in October, 1902.

In Barrows' first case, done in 1902, the patient was a ballet dancer, and both ovaries were prolapsed and cystic. Plastic work was done on both organs and they were transposed. Complete relief of her symptoms resulted, and in five months she became pregnant and passed through a normal confinement, and was well two years after the operation. The result in this case goes to prove that the changed position of the ovary in no way interferes with its function.

Mauclaire, according to the description of his technic, makes the button hole in the broad ligament *below* the round ligament and at a point equidistant between the side of the uterus and the pelvic wall. He advises cutting the tubo-ovarian fringe so as further to mobilize the ovary, and he sutures the extremity of the tube to the anterior surface of the top of the infundibulopelvic ligament to bring it close to the ovary so as to favor fecundation. Suspension of the uterus is done if necessary.

Barrows, in his operation, passes the ovary through the broad ligament and *above* the round ligament, between it and the tube. He does not find it necessary to cut the tubo-ovarian fringe or to suture the end of the tube in the proximity of the ovary. He shortens the round ligaments by doubling them, and likewise the infundibulopelvic ligaments, which procedure not only holds the uterus well forward but, in addition, creates a fossa on the front of the broad ligament in which the ovary rests. This technic is well shown in the accompanying illustrations.

I have operated according to this method in eleven cases, and am well pleased with the result of the operation, in addition to its simplicity of execution. I much prefer Barrows' method of placing the ovary above the round ligament. It is easier of accomplishment and the ovary rests more naturally in that position than if placed under the ligament and I think with less danger of constriction. I have operated in both ways, and would limit the low operation to those cases where Gilliam's method of suspension of the round ligaments from the abdominal wall is practiced. I have used Gilliam's operation and transposed the ovary above the round ligament very satisfactorily. Care should be taken to fasten the round ligament well out toward the internal ring and to make the buttonhole somewhat nearer the uterus than ordinarily.

The operation is far easier to execute than would appear from the description. If the tube is caught up between the thumb and finger, putting the mesosalpinx on the stretch, the broad ligament at this site appears very thin and translucent, enabling the operator to avoid the branches of the pampiniform plexus of veins running from the tube. The buttonhole is made by passing a pair of closed scissors through the ligament at a point above the pampiniform plexus and withdrawing them with the blades open. No hemorrhage results from this simple procedure and the ovary is passed through the slit without any tension on the mesovarium, as that structure and the mesosalpinx is very lax, especially so in cases of prolapse. The buttonhole is made wide enough to prevent any constriction of the pedicle of the ovary. A suture placed at each end of the slit, including the ovary, securely fastens it in position. I have not found it necessary to shorten the round and infundibulopelvic ligaments except in cases of retroversion or prolapse of the uterus.

In the erect posture the uterus lies in front of the axis of the inlet of the pelvis, which bears the relation of an angle of about 45 degrees with the horizon, so that the ovaries hang dependent from the anterior and under surface of the broad ligaments. The impossibility of a return of the ovary to the cul-de-sac of Douglas must be self-evident so long as the organ remains on the front of the broad ligament.

This is the great point of superiority of this operation over all the other methods in vogue. The methods of Imlach, Sänger and Hirst and of Gardner and Bonney can not prevent a further elongation of the ovarian supports should the same etiologic factors be again present. Subsequent labors or abortions may be followed by subinvolution with its sequelæ. Just as the cervix can elongate by continuous traction of prolapsed vaginal walls, so I believe if similar causes are in play the ovary will prolapse after shortening the ovarian ligaments.

The tubo-ovarian ligament and mesovarium is little more than a duplication of the peritoneum containing areolar connective tissue, but practically no fibrous or muscular elements. They are, therefore, very yielding in character, and this gives rise to a doubt as to the stability of any operation of elevating the ovary, depending on shortening the infundibulopelvic ligament.

Again, the ovarian artery and veins course through the broad ligament and enter the pelvic wall close under the infundibulopelvic ligament. Doubling this ligament can hardly fail to cause a certain amount of obstruction to the collapsible ovarian vein, a vein which we well know is already overburdened with the work it has to do.

The operation of shortening the utero-ovarian ligament by whatever technic is likewise in danger of a subsequent elongation of the ligament, should the etiologic factors recur.

The criticism that I have heard advanced that anteligamentous transposition of the ovary will tend to interfere with fecundation is not well founded. Barrows' cases disprove it, and if pregnancy can follow removal of an ovary and tube on opposite sides (*vide* Kelly[21]) this change in position will have little effect in preventing fecundation, especially as it is now generally recognized by physiologists that the supposed "grasping" of the ovary by the fimbriated extremity of the tube is a myth.

Since December, 1903, I have transposed the ovaries to the front of the broad ligament in the following eleven cases:

CASE 1.—Mrs. I. L., aged 34, has suffered with symptoms of ovarian pain since birth of only child four years ago. Internal dyspareunia was so severe that patient went abroad for six months to avoid coitus. Examination revealed an enlarged, painful, prolapsed left ovary with a partially retroverted uterus. A cystic portion of the left ovary was resected, and the organ was passed through the broad ligament. The round ligaments were shortened after Wylie's method. The

19. Mauclaire: La Semaine Gynecologique, Feb. 7, 1905.
20. Medical Record, Oct. 15, 1904.
21. Kelly (H.): Operative Gynecol., ii, 189.

result has been complete relief of the dyspareunia. The ovary is easily palpable in its new position, but is abnormally tender during menstruation.

CASE. 2.—Mrs. C. H., aged 25, 1 labor, 4 years ago. There is constant pain in back and right side, very severe during coitus and defecation and during menstruation; she suffers from reflex vomiting, ten to fifteen times daily during her periods. The uterus was found to be retroverted and the painful right ovary enlarged and resting in the cul-de-sac. Plastic surgery was done on the right ovary and it was transposed after the method of Barrows and the round ligaments were shortened. I examined her on May 29, 1907, and the result is a perfect recovery from all pain. The reflex vomiting has ceased, except occasionally, and is then very slight. The ovary could be felt in its new position with ease.

CASE. 3.—Mrs. N. D., aged 30, multipara, had constant pelvic pain and dyspareunia. Diagnosis, prolapsed, subinvoluted uterus and both ovaries in cul-de-sac. The ovaries were punctured and small cysts resected, and double transposition done. The round ligaments were shortened and in addition curettage, trachelorrhaphy and perineorrhaphy were done at the same sitting. Result is to-day as satisfactory as could be desired.

CASE 4.—Mrs. M. R., aged 30, multipara, complained of severe pelvic pain, worse on left side, backache, pelvic tenesmus and leucorrhea. Both ovaries were prolapsed, the left being large and lowermost; lacerated cervix and pelvic floor. The left ovary was removed, as its condition did not seem to warrant conservatism and the right was transposed. The cervix was amputated and the pelvic floor restored. A letter recently received states that she has been cured by the operation.

CASE 5.—Mrs. C. P., aged 25, multipara, suffered from severe dyspareunia, constant pain in both inguinal regions and back, and pelvic tenesmus. Diagnosis, prolapse of both ovaries with adhesions. On opening the abdomen, the left tube and ovary were found buried in adhesions and hopelessly diseased, so were removed. The right ovary was dug out, not much the worse for wear, and was transposed. The uterus was suspended, as the broad ligaments were very slack. The result has been a perfect cure.

CASE 6.—Mrs. H. B., aged 21, multipara, married three years, had constant pain in left side and dyspareunia. Examination shows uterus low in pelvis and antiflexed, and an enlarged, tender, partially prolapsed left ovary. Small cysts were removed from the left ovary and it was transposed. A modification of Gilliam's operation was done to lift up the uterus. Examination four months later shows relief of all symptoms.

CASE 7.—Miss P. L., aged 30, had pain in left inguinal region, worse on menstruating, backache and constipation and neurasthenia. Examination revealed a retroverted uterus with tender left ovary in the cul-de-sac, a movable right kidney, and a general enteroptosis. On opening the abdomen, the left ovary appeared normal, but was transposed. The uterus was suspended by the round ligaments. The appendix was removed, as it was adherent, congested and enlarged. This patient has been relieved of her ovarian pain and backache. She is still somewhat neurasthenic, and wears with much benefit, a snug fitting straight front corset, put on in the elevated hip position, to support the abdominal organs.

CASE 8.—Mrs. A. P., aged 32, married ten years, sterile; she suffered from pain in both inguinal regions and back, worse at periods, and dyspareunia, always on the left side. Divulsion and curettage for her sterility was done. Both ovaries were punctured and buttoned through the broad ligament, and the uterus was suspended by its round ligaments on account of an abnormal sagging of the uterus. I have recently examined her and find her entirely relieved of her symptoms, except some pain in the left ovary during her menstruation.

CASE 9.—Mrs. K. K., aged 30, multipara, was operated on by another surgeon two years ago when plastic work was done on her ovaries with a vertical suspension of the uterus. She came to me with constant pain in left side deep in pelvis, which had existed since her previous operation. On opening the abdomen, adhesions of the omentum to the suspending ligament of the uterus were encountered. There were slight adhesions about both ovaries, which were partially prolapsed. There was a condition of varicocele of the pampiniform plexus on both sides, and the appendix was thickened and adherent to the right infundibulopelvic ligament. Both ovaries were freed of their adhesions and were transposed, and the appendix was removed. This patient, while admitting considerable improvement, still complains of some pain in the ovarian regions.

CASE 10.—Mrs. S. B., aged 28, multipara, has suffered, since a difficult labor several years ago, with pelvic tenesmus, frequency of micturition, constant pain in left ovary, worse when walking, marked dyspareunia, and painful defecation, all the symptoms being worse during menstruation. Examination showed a severe laceration of the vaginal sulci, a large cystocele, a lacerated cervix, the uterus retroverted, and both ovaries were prolapsed, the left in the cul-de-sac and very tender. After curettage and repairing the cervix, the anterior vaginal vault was opened with a T-shaped incision and the bladder separated from the vagina and uterus. The uterus was anteverted through the wound and the ovaries and tubes brought into view. Both ovaries were then transposed to the front of the broad ligament, after Barrows' method, and the round ligaments were shortened with silk sutures. The bladder was then fastened high up on the anterior surface of the uterus and broad ligaments according to the operation devised by Goffe, and which I am very partial to, and the anterior vaginal wall closed. The operation was then finished with a perineorrhaphy.

The result was perfect and, at this writing, although only four weeks after the operation, she states that she feels relieved of all her symptoms.

CASE 11.—Mrs. J. T., aged 35, multipara, had constant pain in left side and back, worse on standing, and dyspareunia. Left ovary was partially prolapsed and abnormally tender and the uterus was retroverted. On operating, the left ovary was found to be partially covered with adhesions. It was liberated and transposed. The right ovary was also slightly adherent and was transposed also. The round ligaments were shortened. This patient has had a normal convalescence, but the operation is too recent to draw any conclusions as to its value at this time.

In the above eleven cases I have transposed the left ovary alone three times and the right three times. In two cases in which the right ovary was transposed the left was removed because hopelessly diseased. I have transposed both ovaries three times. The uterus was found to be retroverted in six cases. It was prolapsed, that is, hung very low in the pelvis due to relaxation of its supports, but not retrodisplaced, in five cases. A condition of more or less general enteroptosis was observed in five of the patients.

In Case 10 I performed the transposition of both ovaries through an anterior vaginal incision, which, so far as I know, is the first time that this operation has been done by the vaginal route. I wish to emphasize its ease of execution by this avenue. The buttonhole is made from before backward and a pair of forceps slipped through and the ovary grasped and drawn forward into route.

According to a letter recently received from Dr. Barrows, he has done his operation thirty-seven times in addition to the twelve cases he reported in his paper. Of these thirty-seven cases five were double, thirty-two were single, twenty-one were the right ovary and eleven the left ovary. Two single operations and one double were followed by pregnancy.

The patients were all relieved by symptoms except two. These he was able to operate on a second time, and he found in one a general pelvic peritonitis with adhesions, which was probably due to a gonorrhea contracted after the operation. This failure ought not to be charged against the operation.

In the other case the ovary was resting apparently very comfortably in its new position, but it was removed and submitted to Professor Ewing of Cornell for examination. He reported it normal except for a slight hyperplasia in the capsule, which doubtless existed before the original operation. This patient still has pain and is of a highly neurasthenic type.

It would seem that this operation has been given a fair trial and, from a study of the sixty cases of Barrows and myself, that the operation has been proved to be a satisfactory one to relieve the distressing condition for which it was devised. If it is done in proper cases it certainly seems to be devoid of any unpleasant sequelæ and does not interfere with pregnancy, as Barrow's two cases following the double operation prove.

SUMMARY.

In conclusion, I would advocate the following summary of the status of the subject.

1. Many cases of prolapse of the ovary are unaccompanied with symptoms. In these cases the ovary is probably not inflamed or adherent and has ample room for movement.

2. Many cases of prolapse of the ovary are accompanied with characteristic symptoms and are only to be cured by elevating the ovary out of danger of irritation and traumatism.

3. Failure to recognize the accompanying prolapse of the ovaries with a retrodisplaced uterus, and to elevate them, is often the cause of an unsatisfactory result following an operation for retroversion.

4. Operations to elevate the ovary which depend on shortening the infundibulopelvic or the ovarian ligaments are always prone to a recurrence to the former conditions, should the same etiologic factors be again present.

5. Any operation which throws the infundibulopelvic ligament into a fold by doubling it is open to the criticism that there is danger of causing an obstruction to the circulation in the ovarian veins and thus increasing an already existing passive congestion of the pampiniform plexus.

6. The Mauclaire-Barrows operation offers a positive and permanent remedy for prolapse of the ovary, as recurrence is impossible. It is very simple and rapid of execution. The anteligamentous transposition of the ovary in no way interferes with the function of menstruation or fecundation. It is not necessary to fasten the end of the tube forward of the broad ligament in the proximity of the ovary to favor fecundation, as proved by Barrows' cases.

7. The operation can be combined with suspension of the uterus, Gilliam's operation, shortening the round ligaments or the infundibulopelvic ligaments for an accompanying retroversion or prolapse of the uterus and it can be performed by the vaginal route much more readily than the other operations.

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Puerperal Infection from the Gonococcus.—Ellice Macdonald, in the *Post-Graduate*, states that the gravity of this infection exists not so much in its prime infection and immediate constitutional disturbances as in the remote result of tubal and pelvic disease some time after the puerperium. It is a well-known fact, he declares, that streptococcus infection results in slight anatomic alterations of the pelvic organs after recovery from the infection, but the reverse is true of gonococcus infection in which marked alteration of tissue is the rule and spontaneous recovery from pelvic disease from this cause is the exception.

OVARY AND TUBE AND OVARIAN TUMORS IN THE INGUINAL CANAL.

RARE CONDITION. REPORT OF TWO CASES.*

J. H. CARSTENS, M.D.
DETROIT.

As this is a very rare condition I thought the report of two additional cases might be interesting. They are as follows:

CASE 1.—Miss C. Z., aged 22, had the ordinary diseases of childhood, and, as a rule, has been in good health. When 12 years of age she noticed a tumor in the left groin which gradually increased in size and then remained stationary. At this time she started to menstruate, and has been regular and normal since, except pain in the tumor, and in the last year this has been getting much worse. Examination revealed a tumor, in the inguinal canal three and a half inches long and one and a half in diameter, which is fluctuating. I made the diagnosis of so-called hydrocele in the female and advised its removal. Operation March 25, 1906. Operated in the usual manner. In trying to peel out the cyst it ruptured, as the wall was very fine, and I then found an adherent ovary and Fallopian tube in the canal. It had extended from the internal ring down and it was adherent so that there was no communication between it and the abdominal cavity, the fluid had collected in the canal and gave the deceptive appearance. I ligated the ovary and tube close to the internal ring and removed them; peeled out the lining membrane and closed the canal with dry sterilized catgut sutures. She made a complete recovery and has been feeling well ever since.

CASE 2.—Mrs. O. S., aged 39; last child 11 years. I delivered her myself of her first children. For many years she had an inguinal hernia for which she wore a truss. Sometimes on neglecting to wear the truss the hernia would protrude, but it was reduced without much trouble. The year before I saw her this occurred again and it was very difficult to reduce it, but the physician succeeded finally, partially relieving her of most of the symptoms, but there still remained the enlargement and she was not able to wear the truss. She had no symptoms of strangulation and felt pretty comfortable and attended to her usual household duties. Menstruation was regular, with little pain. She noticed an enlargement of the abdomen, but, as she is a large, fleshy woman, paid no particular attention to it, because she was near the menopause and thought she was getting stouter. But she continued to get larger and noticed that it was principally on the right side. She finally called on me for examination. This showed a good sized cystic tumor, evidently an ovarian, on the right side. It was high up and could be just felt through the vagina and fluctuation detected on percussing the enlargement. There was nothing to do except to operate. Nothing of the hernia could be detected. I stated that probably the tumor closed the opening and prevented the intestine from coming down, and on operating I would close the sac from the inside, as I sometimes do in such cases. She entered Harper Hospital and I operated Oct. 13, 1906. As I supposed the tumor was adherent, I made my incision a little to the right of the median line and was astonished to reach the tumor so quickly, without having to cut through muscular tissue. It seemed to lay immediately beneath the outer sheath of the rectus and toward the right. There seemed to be no adhesions, as far as I could reach with my finger, as I had only made a three-inch incision. I tapped the growth and it contained six pounds of white liquid fluid. When pulling out the sac I found the pedicle (which was composed of the tube and broad ligament and the remnant of the ovary) coming through an opening high up near the crest of the ilium, that is, the internal ring. By pulling on the pedicle and introducing my finger, I could feel the uterus. I now tied the pedicle and covered it in the usual manner and removed the growth, then dissected out the sac and closed the opening in the usual manner with dry

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

sterilized catgut sutures. She made a smooth recovery with the exception of a small stitch abscess. The hernia is cured.

This was to me a remarkable case, as one would hardly think it possible that the hernial sac could be so dilated that it would contain a tumor weighing over six pounds, and for this reason I put it on record.

In an exhaustive paper on "Hernia of the Ovary and Tube," Dr. Frank T. Andrews[1] read before this Section last year, he reported eighty-eight cases, which shows it to be a rather rare condition. I have had the literature carefully looked over again and find twenty-seven more cases, thus with mine bringing the list up to one hundred and seventeen. Some of the new cases that are reported were evidently overlooked, and the others had been published since Andrews' paper was read.

I will not republish Andrews' list, as his cases are on record, but only wish to add the new cases, which are as follows:

BIRNBAUM[2] describes a case of hernia inguinalis, in a misplaced ovary, in a woman aged 35. The tumor was the size of a walnut, and was present in the left inguinal fold, and had been repeatedly explained as an inguinal hernia. Operation revealed a small uterus which was probably congenital. The hernia was a utero-inguinalis with histologic changes in misplaced ovaries. The ovary present with the uterus exhibited many variations from a normal structure.

BRÖSE[3] reported a case of hernia ovarii inguinalis the size of a walnut containing a segmented ovary with its abdominal end of the tube in the sac, which could be removed without opening the abdominal cavity.

CULLEN[4] reports a case in which the ovary has embedded itself in a scar from a former appendix incision, which was discovered by a visible bulging of the scar by sensation of weight in the lower abdomen. After resecting the old scar and entering the abdomen it was found that an apparent adherent omentum was in reality a large cystic ovary, which laid directly beneath the skin. Attached to it was a hydrosalpinx fully 1.5 cm. in diameter. After loosening the omental adhesions to the ovary, the abdomen was closed without drainage. The patient fully recovered.

DENEUX[5] relates a case in a multipara who fell during pregnancy and produced a tumor at the inner edge of the crural arch. After delivery the patient was operated on for femoral hernia, and a hydatid was found, behind which lay the ovary, three-fourths of which was cystic.

HODGE[6] reports a case of strangulated hernia of the ovary in a two-months-old Italian child. Operation under chloroform revealed a thick hernial sac, which contained a swollen and discolored ovary, almost black, 3½ by 1¾ cm. in size. There was no intestine in the sac. The ovary and tube were ligated and the parts repaired as well as possible. The child had good convalescence.

KIEFFER[7] reported a case of an ovary in a femoral hernial sac. The operation exposed a hernial sac, adherent internally to a mass of fat surrounding a firmer body, an ovary enveloped in thickened omentum. The ovary was as big as a large almond and extremely sclerosed; it contained some atrophied corpora lutea, and a small follicular cyst of the size of a pea. The displaced organ was removed, the omentum resected with the sac, and the crural canal closed.

LALLEMENT[8], in 1816, had a case of right crural hernia containing the uterus, tubes, ovaries, part of the vagina and pieces of the epiploon. The hernia had existed forty years and the right ovary had become encysted.

LAMBERT[9] reported before the Medical Society of the Northern Department of France a tube and ovary which he found in an inguinal hernia, in a maiden aged 22. It formed a tumor about the size of a hen's egg in the left inguinal region, extending down to the labium majus on the same side. When the sac was opened it was at once visible that both the tube and the ovary were partly atrophied. They were accordingly dissected as high as possible.

MAYLARD[10] describes a case of strangulated femoral hernia of the ovary in a patient aged 75. A herniotomy revealed the ovary, which was removed. Patient recovered.

MILLER[11] reports a case in a woman aged 40. The tumor was visible in the right femoral region; at intervals she wore a truss, occasionally suffered a great deal of pain in the right groin. The mass was irreducible; an operation revealed a cystic and deeply congested ovary. Recovery.

NICOLL[12] cites four cases of hernia of the ovary in children: One case in a child aged 3 years, in which the hernia contained an ovary which was supposed to have been developed at the age of three months. The other three cases, the ages ranged from 4 to 9 years of age, in which the inguinal hernia contained the ovary, but it was supposed that the "lump" had already been noticed from early infancy.

NICOLL (I. H.),[13] of Glasgow reports several cases of hernia of the ovary in infants.

CASE 1.—A babe aged 9 weeks, hernia of the ovary and fluid in the canal of Nuck; ovary reduced and canal obliterated.

CASE 2.—A babe aged 2 months, hernia of ovary which contained two small cysts; cysts destroyed with pure carbolic acid; ovary reduced and canal obliterated.

CASE 3.—A babe aged 2 months, hernia of ovary which contained a small cyst of green-pea size; cyst removed with sharp spoon; ovary reduced and canal obliterated.

CASE 4.—A babe aged 3 months, operation, ovary found enlarged and congested and adherent to the sac.

CASE 5.—A babe aged 3 months, operation, ovaries returned and canal obliterated.

Nicoll says that he "saw two such cases of bilateral ovarian hernia in some thirty-five cases."

CASE 6.—Baby aged 4 months, operation confirmed the diagnosis of hernia of the ovary. The Fallopian tubes were also found in the sac.

CASE 7.—Baby aged 2 months, operated on for pyloric obstruction, but it was also found a hernia of the ovary. The child also had an umbilical hernia.

CASE 8.—Baby aged 4 months, hernia of the ovary in which the operation had to be postponed on account of severe eczema of the trunk and limbs.

OETIZZEN[14] operated on a case of hernia of the ovary. After the sac was opened the tube and the ovary were returned to the abdomen.

OWENS[15] relates a case of strangulated hernia of the right ovary in a patient aged 39, who for a period of about ten years noticed the tumor in the right femoral region and suffered from pain most of the time. Taxis was attempted, but failed, and a herniotomy was performed, revealing a tumor which was strangulated and cystic. It proved to be the right ovary. The cysts were emptied and the mass returned to the abdominal cavity. Recovery.

PARSCHE[16] reports a case of prolapsus ovari in the femoral ring, circulation a strangulated femoral hernia, in a woman aged 43. The tumor was located in the right femoral region. It was hard, with no superficial redness, but extremely painful to any kind of manipulation. The tumor measured 6 cm. in length and 4 cm. in width, and was oval or pear-shaped, the size of an orange, and appeared very black and congested after exposure. The ovary has been found undergoing degeneration, having been converted into a glandular cystoma of a multilocular character.

PUECH[17] has found 16 cases of crural ovarian hernia; all

1. THE JOURNAL A. M. A., Nov. 24, 1906.
2. Berliner klin. Wochschr., May 22, 1905.
3. Monatschr. f. Geburtsh. u. Gynäkol. xxiv, 698, 1906.
4. Johns Hopkins Hosp. Bull., May, 152, 1906.
5. Recherches sur les Hernies de l'Ovarie, 1813.
6. Annals of Surgery, xliv, 938, 1906.
7. Bull. de la Soc. Belge de Gyn. et d'Obstet., January, 1905.
8. Described by Cloquet, Pathologie Chirurgicale, 1831.
9. La Gynecologie, June, 1905.
10. Brit. Med. Jour., 1892, i, 761.
11. Medical News, lx, 297, 1892.
12. Glasgow Med. Jour., lxiv, 268, 1905.
13. Glasgow Med. Jour., lxv, 367, 1906.
14. St. Petersburg Med. Zeitschr., 1868.
15. Brit. Med. Jour., ii, 699, 1873.
16. Internat. Jour. Surg., 299, 1906.
17. Medical News, lx, 297, 1892.

were acquired; none of the casts appeared before the twentieth year.

Webster[18] is reported by Patsche to have had two cases:

CASE 1.—An operation for femoral hernia; the tumor was the size of a small orange with a pedicle freely movable in the femoral canal. The tumor contained straw-colored fluid, the solid part resembled ovarian tissue. A diagnosis of cystoma of an ovary in the femoral canal was established.

CASE 2.—Manifested symptoms of strangulation. Webster operated for a femoral hernia and found a tumor the size of a hen's egg. The tumor resembled a cystic ovary, which was so diagnosed.

In the whole list there is not a single case of a large ovarian tumor. They were all ovaries, sometimes cystic, sometimes atrophied, but no mention is made of an ovarian tumor and I am glad to put my case on record before this Section, as this is a rare condition.

Most of us have seen very few cases of ovarian hernia, and it strikes me as peculiar that Nicoll, of Glasgow, should report a dozen cases, which seems to point in the direction of a congenital tendency. The probability is that these cases were all, more or less, related to each other. All the other cases are reported singly, or at least only a few in the experience of one man, which shows the extreme rarity of this condition.

DISCUSSION

ON PAPERS OF DRS. CARSTENS AND WARD.

DR. D. TOD GILLIAM, Columbus, Ohio, thought that Dr. Ward had solved the problem of dealing with a prolapsed ovary with or without retroversion of the uterus. He failed to see how an ovary fixed in that way could become displaced or be inconvenienced in any way. It does not, he said, make much difference in regard to fecundation where the ovary is in the abdomen. The old idea that the fimbriated extremity of the Fallopian tube must grasp the ovary in order to receive the ovule was exploded long since. There are many theories as to how the ovule gets into the fimbriated extremity. In several of Dr. Ward's cases pregnancy followed the operation, showing that the woman is left in as good condition as before. By many of the old methods of operation the ovary is suspended in an abnormal way. The methods with which Dr. Gilliam is acquainted have left the ovary pendant with a certain amount of traction, which to susceptible persons must give rise to annoyance and pain. Dr. Ward's method, he said, eliminates that feature entirely.

DR. WALTER B. DORSETT, St. Louis, Mo., called attention to the fact that there is in these cases a previous inflammatory condition; whether that inflammatory condition is due to subinvolution, or to some infection, does not make any difference. The ovary is prolapsed. The uterus is retroverted and prolapsed because it is heavy, and in examining these patients many are found to have cystic ovaries, or the great majority of ovaries are heavy. Dr. Dorsett suggested that if Dr. Ward had gone further and indicated some measure by which the cystic condition could have been relieved, he would have made a better paper. Dr. Dorsett has been in the habit, for the last five or six years, of resecting the ovary, and he has had some remarkable results follow operations done to give relief from ovarian dysmenorrhea. Although the majority of writers to-day do not believe that cystic ovaries produce dysmenorrhea, Dr. Dorsett said that he had cases where he was sure that the condition was due to a cystic ovary. One case, in particular, was that of a trained nurse, who for seven or eight years had been incapacitated for work and become a morphin habitué. Dr. Dorsett opened the abdomen and resected both ovaries, and for the past two years the woman has menstruated without any pain at all. On the consideration of this prolapse of the ovary, he said, there must be taken into consideration the cystic condition. Operation is easily and quickly done. The ovary is incised down to the hylus, the membrane cut out, and the ovary sewed together with a small catgut ligature. By working along these lines one does not have to do the complicated operation of stabbing a hole in the broad ligament, pulling the ovary through and fastening it in an unnatural position. Dr. Dorsett thought that there might be trauma from the pressure of a tightly worn corset when the ovary is fixed so far forward in the pelvis and particularly when the uterus rises in the abdomen in pregnancy.

DR. H. J. BOLDT, New York, expressed surprise that Dr. Ward and Dr. Barrows had operated on 37 patients with prolapsed ovaries. He believes that those who do much gynecologic work will see a large number of patients who have prolapsed ovaries and that it seldom is found that such prolapse gives rise to symptoms. In many instances retroversion is associated with prolapsed ovaries, yet large cystic ovaries will prolapse without retroversion of the uterus. Dr. Boldt thinks it makes little difference, if the ovary is not too large, whether or not there is cystic degeneration; but, when a large ovary is prolapsed, occasionally there will be symptoms caused by the displacement. Although he has not done the operation of making a slit in the broad ligament, yet from a theoretical standpoint he thought that this method might cause circulatory disturbances. If the results are as satisfactory as is claimed by Dr. Ward and Dr. Barrows, it would be well worth giving the method a trial. It is an extremely difficult matter, however, to suspend the ovary, after it has been prolapsed, with a permanently satisfactory result.

DR. GEORGE G. WARD, JR., New York, stated that the discussion of his paper had been somewhat handicapped, because the paper was a little long and he was obliged to omit reading a considerable portion of it. In the first place, he disclaimed any credit for originality, as the operation was not his, as Dr. Gilliam's remarks might have led some to think. The operation was probably done first by Professor Mauclaire of Paris, in 1903. Barrows did identically the same operation in 1904, and reported it in the *Medical Record*. Barrows reported his first case to the New York Medical Society in 1902. Dr. Ward became familiar with the operation and tried it as an experiment in his own cases, and with very satisfactory results. He terms it the Mauclaire-Barrows operation. The difference between the two operations is that one puts the ovary under the round ligament, the other above it. He prefers Barrows' method of putting it above the broad ligament. Barrows found it necessary to shorten the round ligament and the infundibulated ligaments. Dr. Ward has not found it necessary to shorten these ligaments in every case. Such a step is apt to cause obstruction in the venous circulation. That, however, is an additional consideration to be decided by the judgment of the individual operator. In two of Dr. Barrows' cases pregnancy occurred. In two cases there was distinct failure. One patient had considerable pain afterward. On opening the abdomen there was found a pelvic peritonitis with adhesions, which were attributed to a gonorrhea contracted subsequent to the primary operation. The second patient had pain in the ovary as before. On opening the abdomen of this patient nothing abnormal was found, but the ovary was removed. It was sectioned, but only connective tissue changes were found. It was of interest to note that in this case there was no relief from the pain after the ovary was removed. The case, he thought, was probably one of neurasthenia. As to resection of the ovary, Dr. Ward said that in many of these cases resection had been done and the patients were in this condition after resection. The uterus was retroverted in the majority of these cases. Because more of these cases occur with retroversion than without, the shortening of the round ligament is of value. As to the possibility of traumatism from a tight corset with the ovary in that position, Dr. Ward said that in the cases without enteroptosis he uses the straight front corset, put on in the elevated hip position. In the two cases of Dr. Barrows in which pregnancy occurred, there was no trouble throughout the pregnancy. Nor is there any trouble in regard to constriction, as Dr. Boldt suggested. The puncture opens out very readily and widely. The buttonhole can be made amply wide and the two stitches will not permit it to extend.

18. Interrat. Jour. Surg., 301, 1906.

THE DENTIST IN THE UNITED STATES NAVY.*

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The title of this paper is ambitious but not correct. In the Navy there is no such grade as dentist, as there is no authority of law under which such an appointment can be made, except for service at the United States Naval Academy.

The need of dental services in the Army and Navy was first urged fully fifty years ago. The matter had been laid before Congress several times previous to the Spanish-American War, but without any action being taken. A dentist was appointed at the U. S. Naval Academy with the rank of assistant surgeon, and that was all that had been done in the matter, except that at the opening of the Civil War all army surgeons were supplied with forceps.

It is difficult to state with precision at whose suggestion the initial steps were taken which culminated in legislation creating a dental corps in connection with the U. S. Army service, but in 1898 when the National Association of Dental Examiners met in Washington, D. C., I prepared two resolutions signed by Dr. T. S. Waters of Baltimore and myself for adoption, one looking to the unification of state dental legislation and the other to the appointment of dentists in the U. S. Army and Navy.

To show the position assumed at that time (when I had not the slightest expectation of becoming dentist at the U. S. Naval Academy) the latter is quoted:

WHEREAS, Congress adjourned without action on the bill introduced (May 27, 1898) to establish a branch of the Medical Department, to be known as the Dental Corps; therefore be it

Resolved: (1) That it is the sense of this meeting that the matter should be taken up again, with the hope that another effort will result successfully, and that the dentists of the country, by letters, and the organized societies, by resolutions, should give evidence to their representatives in Congress that they do sincerely desire such a law.

Resolved: (2) That a committee of five be appointed to inaugurate steps looking to the speedy action of all dental organizations, cordially endorsing the employment of qualified dental surgeons in the Army and Navy.

Resolved: (3) That this meeting notes with pleasure, that while various attempts were made throughout the country, notably by the Missouri State Dental Association (which was the first to endorse the bill referred to) and the Chicago Dental Society, the issue was brought to a practical and successful result, at least so far as the forces now in the Phillippines are concerned, by the appointment of a graduate of the dental department of the University of California and two assistants, to serve with General Merritt's Army.

Sooner or later positive action must be taken by Congress on the question of dentists in the Navy. Congress has already recognized the value and need of dental services in the army by providing for thirty-one contract dental surgeons and appropriating $57,960 for their salaries this year, the addition to the thirty heretofore authorized being for the U. S. Military Academy. I shall conclude this paper with the substance of the latest discussion of the question of dental surgeons for the Navy in the House of Representatives, February, 1907, so ably led by the Hon. Robert G. Cousins of Iowa, of the Committee on Naval Affairs, which had unanimously recommended the bill. America is the only nation which has made anything like adequate provision for the dental care of its soldiers. The dental force in the South African War (according to the London *Lancet*) was "one dental attendant to this British Army of about 200,000 officers and men."

Every valid argument used in favor of dentists in the Army may be urged with equal force in behalf of dentists in the Navy (at naval stations, at least). As the U. S. Army has its dental surgeons, the Navy certainly needs the same adjunct to its medical staff. Really the naval man has fewer opportunities than the military to secure the services of a civilian dentist on account of his environment.

If the services of the dental corps of the Army, as officially published, have almost immediately relieved many cases that were previously carried for several days on the company's sick report, why could not a similar statement be made of the Navy, under like conditions, where the record gives 268 days as the total number of sick days from two cases of dental caries, and the daily average of all cases under treatment at the same time as only 7.36?

If public sentiment is so aroused as to demand enlightened and adequate dental treatment for the officers and enlisted men of the Navy, it will be found feasible for Congress to meet the demand. Socrates is credited with having said: "The state is a great and noble steed, who is tardy in his motions, owing to his great size, and requires to be stirred into life; hence a gadfly is necessary to fasten on the state to arouse, persuade and reproach, lest the state may fall asleep."

Who are so competent to know the requirements of the naval service as those who are familiar with it? Besides, why should the Secretary of the Navy and the Surgeon General be criticised for recognizing the obstacles which surround the launching of a new line of service—a Dental Corps in the Navy—an innovation contrary to established policy? The only hope for passing a bill to add a corps of dental surgeons to the Bureau of Medicine and Surgery of the Navy is by cooperating with these officials and not by abusing them.

The text of the bill offered Feb. 14, 1907, as an amendment to the Naval Appropriation Bill, consists of one paragraph which follows, and its discussion shows how it is viewed by members of Congress when called on to act, while the objections made should be borne in mind in any contemplated legislation submitted to the next Congress from any source:

Dental surgeons for the Navy: That the President be, and he is hereby, authorized to appoint dental surgeons to serve the officers and enlisted men of the Navy and Marine Corps, not to exceed thirty in all. Said dental surgeons shall have the rank and compensation of acting assistant surgeons in the Navy; shall be graduates of standard dental colleges, trained in the several branches of dentistry; of good moral character and professional standing, and shall pass a physical and professional examination; and their appointment shall be for a term of years, and revocable at the pleasure of the President, and the sum of $50,000, or so much thereof as may be necessary, is hereby appropriated for that purpose.

The points considered are:

1. The appointment of dental surgeons should be for a term of years and revocable at the pleasure of the President.

2. If we are to have dental surgeons as officers in the Navy they will have to go on the retired list and be appointed for life the same as other officers.

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

3. In reference to the desirability of having dental surgeons in the Navy, certainly some provision ought to be made for them.

4. Does the Committee on Naval Affairs believe that it can create any commissioned officers in the Navy who will not be appointed for life and put on the retired list within a very short time by law?

5. The bill does not create a dental corps; it simply hires a number of men, dentists of good standing, who shall have the rank of assistant surgeons, the right to discharge them at will being left to the President.

6. The committee in providing for dental surgeons discriminates against them. An assistant surgeon of the Navy must be appointed by the President and confirmed by the Senate. Now it is proposed to give the same rank to a dental surgeon, but his appointment is not confirmed by the Senate; he is appointed for a term of years—no one knows whether it be for one year or fifty years—but at the pleasure of the President. Certainly if we are going to provide these surgeons in the Navy we ought to provide them on exactly the same basis as other assistant surgeons.

7. An assistant surgeon is a commissioned officer.

8. The Navy probably needs dental surgeons as much as the Army, and it has worked admirably in the Army. Providing dental surgeons in the Navy ought to be on the same basis as the dental surgeons in the Army. The Army has no commissioned dental surgeons; they are contract dental surgeons. This amendment proposes that they shall have the rank of assistant surgeons, revocable at the pleasure of the President. That changes the law and would get rid of an officer without a court-martial. The President, unless some charge was made against a man, would undoubtedly leave the assistant surgeon in until the time of retiring and retire him with rank and pay of assistant surgeon.

9. Both arms of the service should be alike so that we shall not be constantly hammered to raise one to the level of the other.

10. Have contract dental surgeons until the time comes when we can report a bill outside an appropriation bill to deal with this question as it should be, and put these men on the basis they are entitled to have in accordance with the dignity of their profession.

11. If he is a contract dental surgeon the department would have the right to remove him without going to the President. The chief medical officer is the proper one, if he is to be removed for incompetency.

12. The government ought to provide for the needs of the Navy along this line. Do not favor any provision that authorizes the President or any other officer arbitrarily to remove any officer at his pleasure. The tendency of that system is to make flunkeys and sycophants of every man in the service subject to that power.

13. Clearly the intention is to make them contract dental surgeons. The Army dental surgeon is a contract dental surgeon.

14. The army contract does not run for any definite time. The medical department of the Army has charge of that. It would be better to put the power of removal in the medical department of the Navy.

15. Strike out the word "rank" and provide for the pay of an assistant surgeon of the Navy, then make him subject to removal by the Surgeon General of the Navy, and all will be accomplished that can be in this bill of putting the two arms of the service on exact equality.

16. You could not secure competent dental surgeons to go away and remain for a cruise of a number of years. You would cripple the efficiency of this proposition if you made it impossible to get dental surgeons who could remain away for a term of years, which you could not do if you should merely make them contract surgeons.

17. The dental surgeon of the Army, when he makes the contract, surrenders his practice absolutely. He goes to Alaska, to the Philippine Islands, or to Cuba if his regiment is there. He is employed simply as a contract surgeon without any term of years. If he is competent he will stay as long as he is able to do his work.

18. What class of men are obtained in the Army—students, beginners? No, an excellent class of men. But every one of them now asks for a commissioned rank. Do not want to see one branch of the service get a commissioned rank and have thirty odd men the other way in another branch of the service.

The following are extracts from the report of the Committee on Naval Affairs which accompanied Hon. Robert G. Cousins' remarks:

1. At present there is no provision of law under which the Department can employ dental surgeons except one for service at the Naval Academy.

Surgeon-General Rixey informs this committee that the dental operations performed by the hospital stewards "are limited to simple procedures and urgent cases," that "this arrangement is a makeshift unsatisfactory to the bureau," that "the necessity of the care of the teeth of the enlisted men existed and its importance to the health of the Navy is appreciated," and therefore this makeshift was resorted to "until legislation could be obtained giving advantages to the enlisted men of the Navy similar to those which the Army has had for several years."

2. When men are kept at sea continuously for a considerable time or located at remote stations where dental surgeons are inaccessible, it seems to us an inexcusable hardship, as the neglect of proper treatment for the teeth may ultimately result in great expense through pensions, besides the inhumanity and suffering which necessarily occur in the absence of prompt and scientific treatment of the teeth when needed. The charts or diagrams of some fifty or more particular cases represented to this committee from a single station at Newport, R. I., is ample proof of conditions which ought not to exist. One apprentice but 16 years of age, had lost every one of the teeth from his upper jaw; another, aged 18 years, exhibited cavities in his 14 upper teeth; another, aged 16 years, had lost practically all of his molar teeth, and the few remaining teeth were imperfect; another, aged 17 years, had lost 7 teeth, and another, aged 18 years, had lost 7 molar teeth. Several others of the 50 cases from 16 to 18 years of age, had lost from 3 to 6 teeth. It was said of these cases, in general, that they presented either ordinary cavities of decay; dead teeth; inflamed gums; chronic abscesses discharging pus in the mouth; pus-producing diseases of the teeth, gums, and underlying bone, or germ-laden foreign matter in contact with the gums and teeth. Such conditions cause gastric and intestinal disorders, impair vitality, and make one more susceptible to infectious diseases. Experts in dentistry inform us that, under present conditions, a large percentage of the cases exhibited from this one station must inevitably lose their teeth at an early age, which may render them pensionable under existing law.

Let us consider the subject under three heads: What do we want? Why do we want it? What is the best way of getting it? Oneness of aim does not imply identity of means. A cautious conservatism is the duty of the hour; conservatism in method, and cooperation and forebearance in thought and action. It is as natural and allowable that another man should differ in opinion with me as that I should differ with him, and if we are both sincere we should have mutual indulgence.

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WHAT IS WANTED.

We want a corps of dental surgeons in the U. S. Navy assigned to such naval stations as would make their services available to the officers, enlisted men and apprentice boys of the naval and marine military service and training schools. With the Army dental corps established as a precedent (it is the thin edge of the wedge), the creation of a similar service in connection with the Navy should be readily accomplished. If the Government finds the dental corps an indispensable part of Army medical practice, should it not, at least, provide for dental treatment for the enlisted men of the Navy, especially those on foreign stations for a period of two or three years, and for those restricted in or deprived of their liberty? If the Government considers it necessary to employ surgeons, pharmacists and chaplains in the Navy, why does it not employ dentists?

WHY IT IS WANTED.

Not forgetting that military and naval hospitals never originated from the spirit of humanity, but have been born of sheer necessity, we want a corps of dentists in the U. S. Navy for, we argue, not only humanitarian but economic reasons. We state, on the testimony of the Surgeon-General of the Army, that the cost of maintaining it will be small compared with the relief from suffering obtained and the greater efficiency of officers and men who have dental service. Moreover, it would prove an economical investment in the matter of hospital expense and pensions, as Dr. Marshall, Army dental surgeon, says: "In treating these lesions of the mouth, dysentery and diarrhea are cured in a few weeks, that without treating the oral cavity, would have required care for months;" and the Pension Office states that: "Loss of teeth from traumatism or scurvy constitutes of itself a pensionable disability," and: "Diseases of the mouth (gums) and loss of teeth are accepted as results of scurvy."

A writer in the *Medical Record* states that it is no use to dose patients with medicine when many of them are constantly swallowing any quantity of germs from unclean teeth, and in many cases large amounts of pus from abscesses. Another writer tells this story:

> On the march every man was his own dentist. Exercising that resourcefulness which necessity breeds, soldiers would plug cavities in aching teeth with tobacco, cayenne pepper, rubber (scraped from waterproof sheets), anything calculated to cover or kill an exposed, throbbing nerve. Such treatment rarely proved effective. After tossing through sleepless nights, the swollen-faced victim would parade with the sick, take the operating chair (an empty biscuit box) and submit to the doctor's hug.

Writing about the South African War, an English dentist says:

> It was necessary that the teeth of the soldier should be especially good. In the early days of the campaign, when volunteers were rejected on account of bad teeth, the War Office was laughed to scorn, "We don't want to eat the Boers," was said derisively. No, but they had to eat something a lot tougher than human flesh, and hundreds of men have latterly been invalided home on account of bad teeth.

A writer in the *Pacific Dental Gazette* says:

> At the Naval Academy our Government finds it necessary to employ a dental surgeon in order to make good officers of cadets. Why is it not necessary to employ dental surgeons for them after they have left their alma mater and are thousands of miles from home?

Although the men enlisted for the naval service have, presumably, sound teeth, yet there is suffering among them from various dental troubles owing largely to the fact that from the time of enlistment to the time of discharge (four years) they have little opportunity to secure the services of a dentist, and their pay is such that they are in no position to engage qualified civilian dental surgeons.

Dr. Otto Hollinger, Chicago, says:

> It was my good fortune to serve the United States Navy in the Spanish-American war as an ordinary sailor, and I agree in the contention for dentists in the Navy and in the Army. When we were on board the flagship *Lancaster* at Key West, preparatory to going to Cuba, a marine came to me with an aching molar. I did not have any medicine or instruments with me, and I sent him to a surgeon, who found a third molar aching very badly. The surgeon thought that by extracting the third molar he would relieve the toothache, but he broke the tooth off, and thinking the tooth was locked with the second molar, he extracted the second molar also, but the toothache was not stopped and he then extracted the first molar which also was decayed. There were three teeth lost, and the poor fellow was sent out to service, but he came back in about two weeks in a very bad condition and was sent to the hospital, placed under a general anesthetic, and the roots were taken out.
>
> In the time of service, men should have attention given to aching teeth, and then when they come into port they should receive the best that the science can give, because these men are giving their best to the Government. Dr. Marshall's suggestions and statements in the course of time will perhaps be greatly modified, but as for belittling these men who are giving their lives for us for from thirteen to nineteen dollars a month, I do not think that the Fourth International Dental Congress should go on record as countenancing anything of the kind.

Medical Inspector Howard E. Ames, U. S. N., recently Senior Medical Officer at the Naval Academy, has given me the following regarding his experience and practice respecting the teeth in his naval career: The sad neglect of the teeth and the apparent wide ignorance of their use and value has caused so much suffering that he has always endeavored to prevent and correct the causes of such troubles. The number of sick days caused by defects in the teeth in the Navy would be surprising if known. The sacrifice of teeth by extraction that could have been saved by the dentist is unknown. He has always when possible arranged with some dentist to attend the requirements of the crew in their tooth troubles, for which special rates were made in keeping with their pay. This was done to encourage the men whose pay is not sufficient to secure the services of a competent man, unless the conditions were explained, and also to prevent their falling into the hands of quacks.

In the Greely Relief Expedition the teeth of every member of the crew of the *Bear* were carefully examined and all defects remedied. The result was that not a man suffered from toothache, while on other ships trouble of the teeth occurred. On the U. S. S. *Detroit* he carried a dentist from Hong Kong, China, to Nagasaki, Japan, a distance of two thousand miles, to put the crew's teeth in order, and before the trip the dentist worked on the ship over a week and after he reached port a week's more work kept him busy.

It has been his habit when the ship is in port for any length of time to carry out these ideas, and the result has been most satisfactory. Further, he is a strong advocate for the establishment of a Dental Corps to be maintained at each of our naval stations.

Rear Admiral Caspar F. Goodrich, U. S. N., in writing of the Camp of Sanitation, League Island, says:

> The wants of the men in one essential were specially supplied, and on a scale novel to my experience. Surgeon Biddle

interested himself so much in this matter that it was not possible to deny him, even had I been moved to do so. A tent was set apart near his dispensary and a competent dentist engaged who brought down his chair and engine and all other instruments of torture which a diabolical ingenuity has devised. His victims are like the sands of the sea, but happily sorrowing, they left the camp and went into the service every man jack of them sound in teeth. It goes without saying that a special schedule of prices was agreed on by which the men secured first class work at the lowest posible rates, and the dentist got lots of valuable experience.

Captain Howe, who possesses the double qualification of active service in South Africa as a combatant during the war and a licentiateship in dental surgery, says that hundreds of otherwise suitable recruits are rejected owing to defective teeth, which could be made serviceable at a relatively small cost and even when a man is accepted the state, as a rule, does nothing to conserve his teeth. Should a soldier's teeth commence to decay nothing is done for them until they ache, and then they are extracted, the result being that when the Reserves are called up, as in 1898, many men are rejected because they have an insufficient number of teeth. The loss in the fighting strength of the Army during the late campaign owing to bad teeth and complaints traceable thereto was so great that before the end of the war the Government had sent out twelve civil dental surgeons, the result being a marked success. A dental surgeon has been sent out to Somaliland for duty during the present campaign, and at home two dental surgeons are being employed temporarily in London and in Aldershot, with most successful results. Captain Howe lays stress on the absolute necessity of a policy of conservatism of teeth during the whole of a man's service and suggests a plan, including the appointment of a staff dental surgeon at the War Office, to secure the attainment of this object.

HOW TO OBTAIN IT.

As to the best way of getting a dental corps in the Navy, first and foremost should be sought and obtained, if possible, the recommendation of the Navy Department. "With the recommendation of the Navy Department," says the committee of the National Dental Association, "it would be easy to secure legislation that would supply the Navy's need in the premises." That has now been given, so far as the Bureau of Medicine and Surgery is concerned, in these words of Surgeon-General Rixey: "The Bureau recommends that Congress be asked to provide for the employment of dentists to be stationed at the large stations at home and all the stations beyond the territorial limits of the United States."

Granted that the claim for a commissioned status has been worked out as a separate proposition in the bill offered in Congress, the bill must be carefully considered in relation to the established order into which it must go, if enacted into law, and it must work in unison and harmony with naval practice, otherwise the achievement would be mischievous.

Let us adapt ourselves to the situation. The dental surgeons of the Army are assigned to stations in Cuba, Porto Rico, Alaska, the Philippines and the United States. Similar assignments could be made to naval stations if dentists were employed in the Navy, say, to Boston, Mass., Newport, R. I., Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Annapolis, Md., Norfolk, Va., Havana, Cuba, Bremerton, Wash., San Francisco, Cal., Yokohama, Japan, Cavite, P. I.; also to Montevideo, Uruguay, and Villefrance, France, where the ships of the South Atlantic Squadron and the European Squadron, respectively, stay for some time. At the naval stations, where ships are laid up for repairs and receiving ships are located, large numbers of enlisted men are found who have time which could be utilized by the dentist who may have the advantage of abundant room. Strange as it may seem, a naval vessel in these days is not at sea for more than a month at a time, and naval ships spend fully as much time in port as they do in cruising. I gathered as the unanimous sentiment of medical officers and others of the Navy that there is no place for the dentist on sea-going vessels. Such vessels are provided with dental cases, each containing a set of forceps, elevators, excavators, engine burs, socket handle for burs, plastic filling instruments and high grade gutta-percha. These are used by the surgeons and hospital stewards, some of whom have taken courses in dentistry. Dr. Pike, of California, who is located near Mare Island, has "had naval surgeons call for a list of materials and medicines to be used in relieving the various pains emanating from the mouth."

Practically there is no room on ships for dental work, for chair, cabinet, engine, etc. If located in or near the "sickbay" the dentist could work on only bright days. As to living quarters there might be trouble.

Recognizing that the equipment of the general surgeon is not wholly adequate to relieve the diseases incident to the mouth, teeth and jaws, Surgeon-General Rixey has provided a course of lectures in the Naval Medical School in Washington. These are on elementary dentistry and instruction in the treatment of ordinary dental troubles, including relief from suffering, the insertion of temporary fillings to protect teeth from further decay until a favorable opportunity can be secured for permanent work, and the extraction of teeth. This action, together with the policy of the Bureau of Medicine and Surgery for the employment of dentists, shows that the Navy Department realizes its responsibilities. My order for this duty was from the Secretary of the Navy and was in part as follows:

You will proceed to Washington, D. C. for the purpose of delivering lectures on the subjects of dental emergencies and the care of the teeth of the Navy personnel, on the first and second of April, 1907 before the Naval Medical School. On the completion of this temporary duty you will return to the Naval Academy, Annapolis, Md. and resume your regular duties.

In conclusion, it is not so much to the facts presented to Congress in the report of its Naval Committee (which are disquieting enough, especially respecting the teeth of apprentice boys) to which attention is directed at this time, as it is to the intelligent manner in which members of the House advocated the appointment of dental surgeons for the Navy.

DISCUSSION.

DR. JAMES MCMANUS, Hartford, Conn., said that experience as a member of the committee of the Association with reference to getting these bills passed, has convinced him that if the members of the dental profession had been in greater unity, if they had taken a little trouble to look into the matter more carefully and closely, if they had been willing to listen to one, even though they differed with him, and had tried to reach a point where they would all work together, and had then gone before the Military Committee and the Naval Committee, with a plan carefully prepared, showing no feeling, they would have got much quicker action from Congress. He considered it a serious matter to go out log-rolling with the members of the House and members of the Senate to get certain things done. He feared that there has been too much of the political ele-

ment in this matter, and that there has been too much effort on the part of men to get their ideas through, rather than to look for the humanitarian side of the question, as they should. Dr. Grady, he said, made some statements which surprised him very much, and other statements which he had read of. He always supposed that there was an examining board, and that no one was accepted, either as a sailor or soldier, who did not have tolerably good teeth, and still the report given out indicates that some of these fellows have no teeth at all. Dr. Grady, he continued, stated that ships remain at a port generally more than a few weeks at a time. While there are no facilities for doing dental work on board a ship, he thought that the dentists in the different ports could do all the work necessary, as was suggested by Dr. Grady. Dr. McManus agreed with Dr. Grady that if this matter were presented to the public more clearly, and if the dentists throughout the country would work more in harmony, something could be done that would be good for the sailor and soldier as well as for the Government, and recognition of the dentist's status would come in due time; but to attempt to settle affairs as they are now, regulating the Army and Navy, to go before Congress and ask for certain things that will be in conflict with the law, is a very foolish move. Dr. McManus was pleased to learn that Dr. Grady had been asked to address the Navy surgeons on this question. That, he said, makes for the benefit of the dental profession before the public. It is well that the highest order of surgeons in the country, those of the Army and the Navy, have asked a practicing dentist to address them and give them some information on the care of the mouth and teeth.

DR. E. A. BOGUE, New York City, referred to a paper by Dr. Cronin, who has in charge seventy-five other physicians making an examination of the school children in New York City, in which the statement is made that something like 50 per cent. of the preventable diseases were spared the children because of the examinations made. Dr. Cronin told Dr. Bogue that he had sent out 40,000 cards to the parents of the children notifying them that their children were afflicted with diseases of the eye, the ear, the tonsils, or the teeth, and suggesting that these children be referred to their family dentist or physician. He received 12,000 replies. Dr. Bogue felt that a very succinct statement of the conditions which Dr. Grady has shown could be made by medical men, showing what the results of those conditions are almost sure to be, and what proper treatment will do. Those things should be put before the legislators. They do not partake of politics or personalities, but they do partake of the humanitarian feeling. Dr. Bogue believed that a statement of the expense of treating the sick in the hospitals because of dental diseases, and the amount of saving that might be made, would present an economic feature which would also appeal to the lawmakers.

DR. V. A. LATHAM, Chicago, pointed out that it is a very good thing to show lawmakers the necessity of the services of the physician and the dentist. Dr. Latham has had some experience in dental work on ocean liners, and feels that any one could meet the conditions made by the different changes of temperature, and which account for the need of the dentist. There is no one, she said, who has ever taken the continental trips but knows of the trouble travelers have with their mouths. Dr. Latham's experience with naval men and young fellows in the naval reserve has been that men who have worked on gunboats complain bitterly of the need of a dental surgeon, more so, even, than in the Army.

DR. F. I. FOSSUME, New York City, was in accord with the opinions expressed by Dr. Grady. Cooperation on the part of American dentists, he said, is absolutely necessary to accomplish any part of the purpose outlined by Dr. Grady. British medical men deal with the subject along the lines referred to, as far as pathologic conditions are concerned. In an editorial in the *British Medical Journal*, on the teeth of the nation, it was there pointed out how great a calamity befell the British Army in the South African war in regard to the teeth of the soldiers. It referred to the laying up of the men with dental diseases, loss of teeth, finally their refusing to do duty on account of the condition of the teeth. There is only one thing to be feared, he said, and that is, educating medical men in dentistry. No dentist fails to realize the mechanical skill required and the many difficult, fine points of minor surgery that must be considered and understood to save teeth. Dr. Fossume suggested that if the American Medical Association, as a whole, will heed the work of the Section on Stomatology, and accept articles along the line suggested, especially regarding remedies proposed to save the teeth of the men of both Army and Navy, then the dental surgeon will be accepted and will be placed on a par with the rest of the officers in both Army and Navy.

DR. THUMAN W. BROPHY, Chicago, stated that he has had a little to do with soldiers in the National Guard, as an officer in the First Regiment of the Illinois National Guard. He found, to his surprise, that he was kept busy looking after the mouths of the men who had come direct from the cities. The First Regiment is made up of Chicago young men, and it would seem natural that they would look to the condition of their teeth and mouths before going to camp; but always, in camp, there is a great deal to be done, and, he said, there is no doubt about the desirability of having the plan suggested by Dr. Grady carried out. At the present time, in Spain, every man who enters the army as a surgeon must have taken a course of instruction in a school of dentistry. In England, a man who wishes to become a surgeon in the army must pass an examination on the subject of diseases of the teeth, and if he fails he must go to a dental hospital and take a course of intruction regarding such diseases before he can be admitted to the army as a general surgeon or assistant surgeon. This matter is being considered by nearly all the governments of Europe at the present time. In the International Dental Federation there is a department of Dental Surgery of the Armies and Navies of the World, and a great deal of good work is being done in that line. As a member of that body, Dr. Brophy was anxious to see the Section, with the endorsement of the general body, adopt resolutions along the line suggested by Dr. Grady, so that the legislators elect will see to it that the wishes of the people are carried out along this line.

DR. M. I. SCHAMBERG, New York City, agreed with Dr. Brophy that the vote of the Executive Council, or the delegates of the American Medical Association, would carry weight. The only question is whether this thing ought to be done at once. He believes that the great harm that came from the attempt made by those in charge of the work in the Army was that they went at it in almost too aggressive a fashion, using political means, to a great extent, so that those members of Congress who had to deal with it, viewed it from a really mercenary standpoint. They thought: Here are the dentists of this country trying to insinuate themselves into the Army. It was difficult for them to see anything in any way other than from a monetary standpoint. He would not approve of dental surgeons accepting anything short of a full commission in the Navy. While serving in Porto Rico as assistant surgeon in the U. S. Army prior to the institution of the dental corps, he was impressed with the fact that a man's standing in the Army depended much on himself; that the men who did the work would receive recognition. There were many contract surgeons down there that were severely criticised, and many who were accepted and entertained by their superior officers were looked on as regular Army surgeons. But, he said, suppose those officers were to remain in the Army for an indefinite period and were to become incapacitated for work? The government would not take care of them after that time, for the reason that no matter how good the service they had rendered, the law says that a contract surgeon is employed for the period he is able to work, and is paid for that period, and at the termination of it he ceases to be connected with the Army and ceases to be taken care of by the Government, the same as a man who is employed to drive one of the mule trains. It is for that reason that Dr. Schamberg would not approve of any step toward the creation of a dental corps composed of contract dental surgeons. It is far better, he said, to await some definite action in that direction in the Army, before taking this step to put a dental corps in the Navy.

DR. E. S. TALBOT, Chicago, saw no objection to passing a

resolution recommending the governing body to take such action, but any action that would be taken by the national body would have to be submitted to the House of Delegates and they would vote on it. He did not think they would take any action on it at present, under the peculiar condition of things as they now exist. We tried it in the Army matter, in the same way, and they flatly refused to have anything to do with it.

DR. RICHARD GRADY, Annapolis, Md., referring to what he had quoted from the *Congressional Record*, ventured to say that it was known to few dentists or medical men. Mr. Foss, chairman of the Committee on Naval Affairs, opened the subject by saying: "We have no dentists in the Navy to-day, and, as you know, our men are frequently on ships for a number of months. They go on a cruise for two or three years, and are away from where they could obtain the means of properly taking care of their teeth. The Army has a corps of dentists, but the Navy never has had a corps; and yet I think there is more reason why the Navy should have dentists than the Army because the Army is continually on the land, whereas the Navy is on the sea." The statements made by other Congressmen are founded on observation and experience and are entitled to consideration accordingly by dentists in endeavoring to obtain legislation. The startling report respecting the condition of the mouths and teeth of fifty boys in training at Newport, as given officially, must, he said, be regarded as unimpeachable in its detail of facts, such as "one apprentice but 16 years of age had lost every one of the teeth from his upper jaw; another, aged 18, exhibited cavities in his 14 upper teeth; another, aged 16, had lost practically all of his molar teeth, and the remaining teeth were imperfect; another, aged 17, had lost 7 teeth, and another, aged 18, had lost 7 molar teeth; and several others of the 50 boys, from 16 to 18 years of age, had lost from 3 to 6 teeth;" but to his knowledge, Dr. Grady said, as may be verified by reference to the reports of the Surgeon General of the Navy, boys are rejected for defective teeth by surgeons of the Navy; and the requirements for admission of the Navy are four serviceable molars, to the Army 6 serviceable molars, and to the Naval Academy, at least eight opposing molars, two on each side of each jaw. Of course, dentists at times find serious deficiencies that surgeons overlook. Dr. Grady said that some Congressmen refrained from supporting the "rider" because they believed it incomplete:—"If we are to have dental surgeons as officers of the Navy to go on retired list and be appointed for life, the same as all other officers . . . ought we not to say so when we commence it?" One member argued that the plan injures the profession it aims to protect:—"The committee in providing for dental surgeons discriminates against them. . . . We ought to provide them on the same basis exactly as other assistant surgeons—appointed by the President and confirmed by the Senate." The measure was further jeopardized by another provision which it was claimed would "give a premium on flunkeyism and sycophancy." The disposition was so antagonistic that the gentleman in charge of the bill said, "I am perfectly willing that the words 'and revocable at the pleasure of the President' shall be eliminated," the congressional sentiment being that "it would be better to put the power of removal in the Medical Department of the Navy," just as "the Medical Department of the Army has charge of that." Dr. Grady hoped that as a result of the discussion and inquiries the medical and dental professions shall come to a better understanding on this question of dental surgeons for the Navy, and that those who really have the interests of the service and of the profession at heart may combine their efforts and make them effective, as a unit, in the enactment of a comprehensive measure, free from admitted defects or significant omissions, which shall be satisfactory to all parties, because promotive of the interests of all. It is probable, Dr. Grady said, that the effort to do something adequate for dental surgeons in the Army and Navy will be resumed at the next session of Congress.

After Dr. Grady had concluded, the Section on Stomatology unanimously adopted a resolution that dental surgeons ought to be appointed to serve the officers and enlisted men of the Navy and Marine Corps.

The House of Delegates later endorsed the employment of dentists in the Navy in the following resolution: "*Resolved*, That it is the sense of this House of Delegates that the efforts of Surgeon-General P. M. Rixey to secure legislative authority for the employment of dentists in the U. S. Navy be approved, and that the Committee on Medical Legislation be instructed to exert such influence on Congress as in its judgment may be deemed wise in support of the measures making such provision." See THE JOURNAL, page 2063, June 15, 1907.

ERYSIPELAS.

A STATISTICAL STUDY OF FIVE HUNDRED AND SIXTY-FOUR CASES.*

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AND

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PHILADELPHIA.

The data here offered are founded on an analysis of the records of cases of erysipelas treated in the Philadelphia Hospital during the past five years. Many of the 564 records examined were found incomplete in certain particulars and the greatest number of cases that could be included in any one table was 548, the smallest number 511. Whenever any question arose as to the classification of a certain case it was excluded from our statistics, the object being to obtain statistics that would be of value with reference to hospital treatment of erysipelas. The influences of season, age, sex, race and nationality are set forth in the accompanying tables. Further analyses were made with reference to the effect of pre-existing diseases and complications (with special reference to nephritis) on the mortality rate.

SEASON.

Season has long been recognized as a prominent predisposing factor in erysipelas, the greatest number of cases occurring during cold weather, and this is, in a measure, explained through the fact that men are more likely to suffer abrasions of the skin during the winter months.

TABLE 1.—INFLUENCE OF SEASON ON ERYSIPELAS.

Month.	Total cases.	Total deaths.	Percentage of Mortality.
January	66	12	18
February	77	8	14
March	104	11	10.6
April	111	15	13.3
May	65	9	13.8
June	11	0	0
July	4	0	0
August	6	0	0
September	10	1	10
October	16	2	8
November	30	6	20
December	46	5	11
Total	546	69	

During June, July, August and September, when in this climate we have our greatest heat, cases of erysipelas were few and, in fact, the rule is that during these months the erysipelas wards are often without a single occupant. Season also exerts a decided influence on the mortality rate, the greater proportionate number of deaths occurring during November, December, January and February, at which months, in this climate, we have

* Published through the courtesy of Dr. Joseph Neff, Director of Department of Public Health and Charities, Philadelphia.

our extreme cold. We have observed, further, that should the months of March and April be unusually cold the death rate is increased.

In our series of 546 cases thirty-one developed during the months of June, July, August and September, and of these but one case was fatal (3.2 per cent.), which is an extremely low mortality rate and shows pre-eminently the significance of season as a prognostic factor in this disease (Table 1).

AGE.

Age is of great clinical importance both as a predisposing and prognostic factor in erysipelas. Most striking in this connection is the fact that in our series all cases developing in children during the first year of life were followed by a fatal termination, while between the first and tenth years the disease was not fatal. At the other extreme of life the mortality rate in erysipelas is exceedingly high, 83 per cent. of cases terminating fatally in those after the age of 80, and 38 per cent. in those between the seventieth and eightieth years.

The duration of the disease in fatal cases is shorter during early adult and middle life than is it in the aged or in infants. It has been difficult to explain satisfactorily why this condition exists, and the best explanation we have to offer is that between the ages of 20 and 60 erysipelas is apt to represent a highly virulent type of infection and complications develop early and are severe in character. In the senile the erysipelatous process is liable to be of a low grade of infection and to spread extensively.

TABLE 2.—DEATH RATE FROM ERYSIPELAS BY DECADES (ALSO SHOWING AVERAGE DAY OF DISEASE DEATH OCCURRED.)

Different Decades.	Number of Cases.	Number of Deaths.	Mortality Rate, %.	Average Day of Death.
Under 1	5	5	100	12
1 to 10	6	0	0	..
10 to 20	33	2	6	12
20 to 30	124	5	4	8
30 to 40	101	11	10.8	6
40 to 50	96	10	10.4	8
50 to 60	75	12	16	8
60 to 70	44	9	20.4	9
70 to 80	21	8	38	12
80 to 85	6	5	83	12
Total	511	67		

SEX.

Of the 539 cases analyzed with reference to sex there were 342 males and 197 females, while of the 69 deaths 56 of them were males and 15 females.

COMPLICATIONS.

Acute Nephritis as a Complication in Sixty-nine Fatal Cases.—A single urinary examination was supposed to have been made, although in 12 of the cases we found no such records. Of 57 cases where a chemical and microscopical analysis was conducted, 32 of these showed both albumin and renal casts, 14 others displayed albuminuria, in 1 the urine contained casts but no albumin was found, and in 10 the examination was negative. Judging from our experience in the wards, we are inclined to believe that both albumin and casts would have been found in a much larger percentage of cases had the urine been examined daily during the height of the disease.

Among the 159 cases in Table 3 that showed nephritis during the active stage of the erysipelas process, only 24 (15 per cent.) terminated in death. Nephritis complicating erysipelas, according to our statistics, gives a death rate practically the same as that obtained for Americans. Again, in our analysis of the 548 cases nephritis was found as a complication in 29 per cent., although the different nationalities in which nephritis was found most common did not always show an unusually high death rate, which suggests strongly that nephritis is not of necessity a serious complication.

TABLE 3.—RELATION OF ERYSIPELAS TO RACE[1] AND NATIONALITY, ALSO TO CO-EXISTENT NEPHRITIS.

Nationality.	Number of Cases.	Percentage of Cases with Nephritis.	Total Mortality Rate, %.
Scandinavian	4	0	100
English	20	40	30
African Negro	31	38.7	25.8
Scotch	4	50	25
Italian	49	34.6	18.3
American	229	24.2	15.2
Irish	109	35.7	9.1
German	22	13.6	9
Russian	45	42.2	6.6
Austrian	32	12.5	0
Total	545		

An analysis of the records for examinations of the urine in 483 cases of erysipelas gave the following: Albumin and renal casts were present in 134 cases; albumin alone was found 148 times; casts without albumin 40 times; albumin and sugar 5 times, and a negative result was obtained in 156 of the cases.

The foregoing statistics show conclusively that renal complications are to be expected in erysipelas, since of the 483 patients studied 327 (67.7 per cent.) were voiding pathologic urine.

GLYCOSURIA.

In our examination of the literature we found only mere mention of glycosuria as a complication or as a pre-existing condition in erysipelas, and the fact that in our study of 483 cases glycosuria was present five times (1.03 per cent.) seems worthy of special mention.

SITE OF DEVELOPMENT AND SPREAD.

An analysis of 552 cases with reference to the site of development, degree of extension, etc., gave the following results: In 66 instances the spread of the disease was limited; in 486 of the cases it was extensive, while in 435 instances (78.8 per cent.) the process extended from one side of the body to the other (crossed the median line), and 117 of the cases spread of the erysipelas process was arrested when it reached the median line of the body.

In 485 cases the initial site of infection was the face, 29 left leg, 11 right leg, 3 both legs, 15 the body (trunk and chest), 12 scalp, 4 left arm, and 3 right arm. Of the 485 cases originating at the face only 7 (0.14 per cent.) of them spread to the scalp, while in the remainder the inflammatory process was limited to the margin of the hair.

THE NEW ERA IN PEDIATRICS; ITS CAUSES AND SCIENTIFIC FOUNDATIONS.*

GODFREY ROGER PISEK, M.D.
NEW YORK CITY.

A revolution has been and is still taking place in pediatrics. It is progressing slowly, but nevertheless surely. Those who have not watched its development closely may not have appreciated its trend or its significance. This department of medicine, formerly disorganized and chaotic, is now clearing up rapidly, and is bound to be greatly simplified and more easily grasped by the general practitioner.

1. One case each developed in emigrants from Turkey, Holland, and France. No deaths.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

CAUSES.

In pediatrics, as in every new field of investigation, there have been a few brilliant workers to whom great honor is due; they have gone ahead and worked out some general rules that have been attended with a considerable degree of success when correctly applied, and naturally the tendency has been to incorporate these rules into the teachings of the medical student, whose training up to within a few years has been mainly didactic.

But there are now coming to the front a new set of physicians, men who enter the colleges with good preliminary training, and who have been laboratory trained. Many of them have studied physics, general and physiologic chemistry, biology, bacteriology, zoology, animal nutrition and pathology, and their application to general medicine. These men have been able to view the subject of pediatrics from an entirely different standpoint, and have been able to interpret correctly the general rules laid down by the older pediatricians. They began to scrutinize the theories that had been put forth, and found that many were based on erroneous foundations, or that incorrect conclusions were drawn from imperfectly understood observations. The result has been the downfall of many supposed principles that were thought to be established beyond peradventure, thereby causing an apparent confusion.

To understand the condition of pediatrics to-day thoroughly it should be remembered that the medical profession is made up of three distinct classes: (1) Those who left the medical schools before any attempt was made to teach pediatrics as a separate branch; (2) those who were taught to follow the teaching of authorities, and who did not have a preliminary training in the natural sciences which would enable them to think and act for themselves; (3) those who are well grounded in general scientific work and can weigh scientific evidence and draw their own conclusions.

When this third class began to assert their disbelief in some of the older teachings, it was looked on as almost heresy, and much controversial writing and discussion was indulged in. The result was that a great deal of scientific research was thus instigated to get at the truth, and so much information was obtained that a general recasting of the teaching and practice became necessary.

A new era in pediatrics has thus been ushered in, and dogmatic teaching has given way to demonstration. To quote Huxley: "The man of science has learned to believe in justification, not by faith, but by verification." Fundamentals acquired on faith have been brushed aside, erroneous beliefs are being disposed of and not allowed to retard progress.

SCIENTIFIC FOUNDATIONS.

The infant is an animal and is, therefore, subject to all the laws of growth, development, nutrition, adaptation to environment and resistance to enemies that apply to other animals. Among these general laws it will be found that all animals require the same nutritional elements, but in different forms and quantities to suit the peculiarities of the different animals; that all animals that succeed in living are provided with, or develop, as occasion demands, means of protection against injury, whether by means of flight, skeletal changes, production of callous, or, as in the child, vomiting, diarrhea, sweating, the production of antitoxin bodies or of opsonins. Further, the life history of an animal is divided into two great divisions: first, that from conception to weaning, when a sudden rapid evolution of organs and functions is taking place, and during which period the mother supplies special forms of food which change as development progresses; second, the period after weaning, when growth is mostly a process of enlargement.

DIETETICS SUPERIOR TO THERAPEUTICS.

It is during the period when the infant should be naturally supplied with mother's milk that the greatest difficulty in feeding is experienced, and mostly so because the peculiarities of the infant's digestive organs, and the behavior of milk during digestion are not sufficiently understood. The newer chemistry of milk has completely upset the older theories concerning milk for infant feeding. New compounds or combinations of the proteids of cow's milk with different salts have been discovered, which have diversified physical, chemical and digestive properties, and it is also important to know which of these compounds is being employed to make our clinical reports of value.

This has necessitated the introduction of a new set of terms and definitions with which the profession at large must familiarize itself, if it is to understand the new literature.

Pediatrics will never be an exact science, because infants are constantly adapting themselves to their surroundings, and what may be successful management under one set of conditions may result in total failure at another time or even in another place. But the same scientific laws apply to all infants, no matter where they may be situated or what is the season of the year. When these laws are well understood, and they are not difficult to grasp, there will no longer be any necessity for treating children by rules and formulas. The textbooks may be reduced in size and made much clearer.

The attitude of a great majority of the general practitioners to-day in treating children is in line with the title of a popular song, "I Don't Know Where I'm Going, but I'm on the Way." One thing after another is tried, hoping that if the children keep going they will get some where. Instead of this work, unsatisfactory to both physician and patient, the physician who appreciates the scientific laws involving the young life will seek out the one which is being violated and will set about to correct the conditions. The infant, if it has sufficient vitality, will then be able to recover its equilibrium. For example, he may find that bacteria are producing poisons faster than the infant can manufacture antitoxin or protective bodies; or that heat is not being properly excreted, causing depression and malassimilation; that lack of resistance is due to a deficiency in one or more of the nutritional elements of the food, or that the form of the food is not suitable.

The aim of the physician will be more than to make a diagnosis of a particular disease; he will study the factors that have caused the condition, and then will assist Nature in repairing the damage resulting from the infringement of natural laws.

230 East Seventy-second Street.

Prevention of Tuberculosis.—Favill, in the *Chicago Medical Recorder*, states that the child who prefers to sit in a corner reading a book is an abnormal product of civilization, and has as distinct a vice to overcome as any child with any degree of moral obliquity. The family whose physical discomforts lead it to crave the immediate comforts of warm air, no matter how polluted, and whose economic necessities make it necessary to exclude the external air, is inexpressibly more the proper object of state intervention than if it were being poisoned by food, drug or alcohol.

Special Article

TRAVEL NOTES FROM SOUTH AMERICA.

NICHOLAS SENN, M.D.
CHICAGO.

(*Continued from page 1440.*)

VI. *THE HOSPITALS OF BUENOS AIRES.

The many hospitals of Buenos Aires, its numerous homes for infants, orphans, the aged poor and helpless, its leagues against tuberculosis and alcoholism, its excellent Red Cross organization, all combine to show that the Argentines possess a charitable disposition toward the sick and poor, and that they have grasped the fundamental idea that prevention is better than cure and that prophylactic medicine is the medicine of the future. The state lottery, an institution that would not be tolerated in our country, furnishes the major part of the contributions which support the many charitable institutions; 25 per cent. of the income of this wheel of fortune is set aside and applied to the support of charitable institutions.

Fig. 18.—Hospital Rivadavia, Buenos Aires.

Buenos Aires has more than its good share of hospitals where the sick poor find the doors wide open for their reception, care and treatment. The following is only a partial list:

Name of hospital.	Number of beds.	Annual expenditures.
Rivadavia	186	$ 77,568
Clinical	230	157,080
Military	160	40,008
San Roque	320	106,728
Children's	435	.....
French	90	49,200
Isolation	50	42,020
Italian	220	65,000
Spanish	115	57,000
British	60	31,285
German	40	20,000
For Chronic Cases	67	24,440
Mixed	176	48,720

There are six free municipal hospitals in the city, one in Belfrano, one in Flores and one in the Broca or Barracas, in all of which advice is given gratis, while in a few paying patients are received. These are the Clinical Hospital, San Roque, Rawson, Rivadavia (for women only), and the Children's Hospital. None of these hospitals is within two miles of the government house, some being more than three miles distant, but all emergency cases are received in the dispensary and temporary hospital under the management of the Board of Public Health, which is centrally located, whence those patients who require further treatment and can be removed, are sent to one or other of the hospitals named. In addition, there is an isolation hospital for contagious diseases rather more than two miles from the center of the city. The Asylum for the Insane is at the south end of the town adjoining the Rawson Hospital, and is divided into two distinct departments, the men's division being dependent directly on the municipality, while the women's department is managed by a committee of ladies called Damas de Beneficencia, who receive the support of the national government. My time permitted me to visit only the latter division.

NATIONAL INSANE ASYLUM.

This asylum has a charming location on the highest point in the city, and comprises many one-story pavilions in large, well-laid-out grounds inclosed by a high wall. One large pavilion is set aside for private patients, each of whom has a private room and a sister to attend her, for which she pays 100 pesos ($42) per month. A well-furnished reception room and parlor are for the use of all the patients. This asylum has a fine amphitheater for clinical teaching, a good working laboratory and a fine postmortem room. In the latter we found several medical students engaged in operative surgery work, the particular operation which was in process being a Syme amputation through the ankle joint. In the general dining-room several hundred patients were at table eating their dinner. They were a very orderly company and seemed to enjoy the repast from the excellent steam kitchen. The asylum for females contains 2,300 patients, and with the employés, the institution has nearly 3,000 inmates, and about the same number are housed in the male department a few blocks distant. Alcohol and syphilis figure largely in the etiology of mental diseases in the books of both departments. Many of the chronic insane were found sitting on the steps of the pavilions and the curbs of the carefully kept walks. The great majority of the insane are Italians.

Fig. 19.—Emergency Hospital, Buenos Aires.

SURGICAL CLINIC AND CLINICAL HOSPITAL.

All of the principal clinics, or, as they are here called, official clinics, of the medical college are given in the National Clinical Hospital opposite the college building. The hospital has accommodations for 300, and the surgical department has on an average about 100 beds which furnish a varied and rich clinical material. The hospital was built twenty-five years ago and lacks many of the modern conveniences and equipments for asepsis. It comprises a number of one-story pavil-

* This series of articles was commenced September 14.

ions and the yellow tint of their outer brick and stucco walls and the cracks in the floors and inner walls are indications of their age and the absence of much-needed repairs. Dr. Antonio C. Gandolfo is professor of surgery and Dr. Daniel J. Cranwell extraordinary professor of surgery. These professors give surgical clinics three times a week on the same days, beginning at 8 o'clock in the morning and usually lasting two hours. Professor Gandolfo operates first on the principal case or cases and is assisted by his subordinate, and while this is being done Dr. Cranwell's patients are made ready. The hospital has no amphitheater and the operating room is not large. At the two clinics which I attended there were from 15 to 20 students present, many of them in overcoats, standing around the operating table. The asepsis practiced is of the simplest kind; the hands and field of operation are thoroughly cleansed by the use of an abundance of warm water and soap and the field of operation is then scrubbed with sulphuric ether. The evening before the operation the patient is given a full bath, and the parts to be operated on are shaved, but the final cleansing is made on the operating table, where the patient lies on the bare metallic surface with no wrap or cover of any kind. Chloroform administered by the drop method is the anesthetic in general use. Pledgets of sterile gauze are used for sponging. I witnessed the following operations by Professor Gandolfo:

Fig. 20.—Insane Asylum, Buenos Aires.

Fig. 21.—Hospital Rawson, Buenos Aires.

1. *Echinococcus Cyst of the Lung.*—The patient was an Italian, 30 years of age, anemic, and considerably emaciated. For four months he had suffered from pain in the left side of the chest, attended by cough and bloody expectoration. An area of dulness could be made out by percussion over the lower and posterior aspect of the left side of the chest. A positive diagnosis of echinococcus cyst of the lung was made, the professor commenting on the case at some length before the operation was commenced. The patient being under the influence of chloroform, a section four inches in length was excised from the ninth rib in the usual manner. An exploring syringe was now made use of in locating the cyst, and on making the third aspiration the barrel of the syringe was filled with the clear contents of the cyst. The cyst was covered by a thick layer of pulmonary tissue, and although there were no adhesions between the visceral and parietal pleuræ, the lung was boldly incised with the knife, using the needle as a guide, the cyst opened and the lining membrane extracted. The patient coughed a good deal during these manipulations, and expectorated fresh blood quite freely. The cavity was tamponed with a strip of sterile gauze and the external wound closed with sutures up to the point of drainage. The patient was doing well when the gauze was removed on the third day, and primary healing of the wound is expected.

2. *Echinococcus Cyst of the Neck.*—The patient was an Indian woman, 45 years old, the subject of a large fluctuating swelling in the median line of the neck, between the thyroid gland and the hyoid bone, which she first noticed nine years ago, and which steadily increased in size until recently it gave rise to symptoms of compression of the larynx and trachea. The skin over the swelling was normal in appearance, and the tumor itself freely movable. In his remarks before the operation, the professor suggested that the swelling might be a cyst of the thyroglossal duct. The operation was performed under local anesthesia. A long median incision was made, and, as soon as the cyst wall was reached, the diagnosis of echinococcus cyst was made. The lining membrane was easily extracted, part of the outer cyst wall excised and the wound drained with a strip of sterile gauze and sutured in layers, with the exception of the small drainage opening.

Of nearly 100 cases of echinococcus cyst operated on in Argentina, Dr. Cranwell could find only one other case in which the cyst occupied this very unusual locality. I saw a similar case in von Eiselsberg's clinic, but in that case infection of the interior of the cyst had obscured still more the diagnosis.

3. *Echinococcus Cyst of the Under Surface of the Liver.*—The patient was a male Argentine, about 35 years old, who for a number of months had complained of indigestion and vague pains in the region of the liver. Owing to the frequency with which echinococcus cysts are met with in Argentina, Professor Gandolfo suspected this disease, but stated that a positive diagnosis could be made only by an exploratory incision, as the symptoms and signs presented were too vague for the basing of a final diagnosis, as no distinct tumor could be felt on deep palpation. The patient, undoubtedly a potator, was a bad subject for general anesthesia. A median incision was made from the ensiform cartilage to near the umbilicus. The moment the operator introduced his finger into the abdominal cavity and explored the under surface of the liver, he smiled and said "Echinococcus." An exploring syringe with a long needle was now inserted, and on the first trial the clear fluid of the cyst contents was aspirated. With a long bistoury, and using the needle and left index finger as guides, the cyst was incised and a considerable quantity of clear fluid and a handful of small daughter cysts were removed. Gauze drainage and suturing of the external incision completed the operation.

These three cases of echinococcus cyst operated on in two successive clinics, and involving three distinct anatomic regions, make an observation which it would be impossible to duplicate in the history of surgery, and certainly would suggest the great frequency with which this disease is encountered in Argentina. In a very valuable book and a monograph of most recent date on this subject, Dr. Cranwell gives an elaborate account of the literature on this disease and the report of nearly 1,000 cases which have come under notice in the hospitals of Buenos Aires. What interested me is the rarity of this disease in the United States and its great frequency here, as both countries receive immigrants from the same sources. A few days ago in reading a book entitled, "The Natural History

of the Strait of Magellan," I came across a sentence which may give some explanation. The idea that the disease is disseminated only by dogs does not appear plausible, as there are fewer dogs in South America than in the United States. Mr. Robert Cunningham, the author of the book just quoted, caught a humming bird on the Strait of Magellan, and on examining the interior of the little bird, found the intestines filled with tenioids. I made a similar observation in Norway when on examining the intestinal tracts of the ptarmigans which I shot, found them in every instance infested with tapeworm. Humming birds are very numerous in Argentina, and I suspect that the prevalence of echinococcus disease may be due to this little creature as a disseminator as well as to the dog.

Professor Cranwell also operated on two cases of inguinal hernia. He does not displace the cord, and after resection of the sac simply suture the inguinal canal with fine silk and the external wound with silkworm gut. Professor Gandolfo uses for buried sutures catgut sterilized by dry heat according to Reverdin's method. Gloves are used only in septic cases.

In a case of relapsing appendicitis, Professor Cranwell opened the abdomen by McBurney's incisi n, with the patient in the Trendelenburg position, made use of a self-retaining retractor in keeping the wound patent, and brought the non-adherent appendix forward into the wound without touching it or any part of the wound with his fingers. The appendix was amputated below the ligature with the knife point of a Paquelin cautery, the stump buried with a purse-string suture, and the external incision closed with silkworm gut. I was told that, simple as is the asepsis in this clinic, primary healing of the wound is the rule in all aseptic cases.

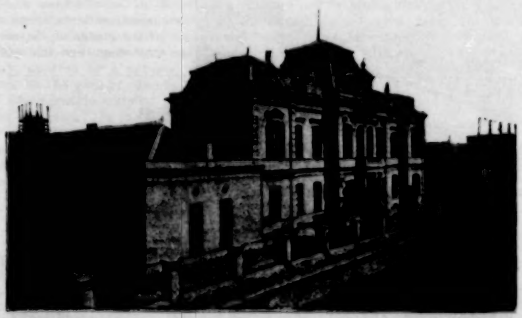


Fig. 22.—French Hospital, Buenos Aires.

Fig. 23.—Hospital San Roque, Buenos Aires.

NAVAL AND MILITARY HOSPITAL.

This hospital, a federal institution, was opened in 1889, and makes provision for the sick and disabled marines and soldiers of the regular army. It is used at the same time as a school for the education of medical officers, as headquarters for the medical department and as an office for the surgeon general, a position at present occupied by Dr. Marcial V. Quiroga. I was shown through this excellent institution by Lieut.-Col. Dr. N. Antelo of the regular army, formerly director of, and now professor of operative surgery in the Military Medical School, and to him I am deeply indebted for other charming courtesies. The hospital and grounds cover thirteen acres. The main two-story building facing the street contains the administrative offices, in the rear of which are the one-story pavilions connected by columned and roofed passageways, all of which, as well as the wards, are floored with tiles. There are eight isolated wards 200 feet in length, 126 feet wide and 23 feet high, containing in all 300 beds, there being 35 in each of those six wards intended for the men and 22 in the two wards reserved for officers. The hospital was fairly well occupied, most of the patients suffering from clinic or slight ailments, with an immensely large contingent of venereal diseases. The two operating rooms for aseptic and septic cases are plain but safe places in which to operate. The fine pharmacy is in charge of a professional druggist. The teaching facilities and disinfection outfit are modern.

The medical students who aspire to military service continue their regular studies at the medical college, but during the last three years of their seven years' course, spend three hours each day in this hospital, where they receive special instruction in the different branches of naval and military medicine and surgery under the tuition of the faculty of the Military Medical School. When these students graduate in medicine, if they have passed a satisfactory examination in this school, they receive a certificate testifying to their competency as military surgeons, which entitles them to enter the medical department of the army, with the rank and pay of second lieutenants.

Twenty-four Franciscan sisters, with a sufficient number of *infermières* take care of the sick. When we visited the fine morgue my distinguished guide smiled and said that it is seldom occupied either by the living or the dead. The electric cabinet is supplied with the newest apparatus for the practical use of this therapeutic agent. The Roentgen room and pathologic and bacteriologic laboratories are modern in every respect, and are of great service in instructing the pupils for the diverse duties in the military service. It seemed to me that this combination of teaching in the Medical College and Military Medical School is an excellent plan for the proper education of military medical officers.

CHILDREN'S HOSPITAL.

This hospital (Hospital de Niños) is devoted exclusively to the care of sick children. It is one of the most modern of the

many hospitals of Buenos Aires, and can accommodate 435 patients, divided as follows: Medical for boys, 41; medical for girls, 41; surgical for boys, 58; surgical for girls, 44; infectious cases for boys, 32; infectious cases for girls, 25, and private patients for either sex, 34. It was inaugurated in 1903. The director of the hospital is Dr. Antonio Arraga. The surgeons are Drs. Maximo Castro, Marcela Hiñas and Andrés Capello.

Dr. Castro is one of the prominent surgeons of the city and has a large private practice. I witnessed two operations he performed one morning. The first case was a little boy, the subject of a small inguinal hernia. The patient was anesthetized and prepared on the table. Through a very short cut across the inguinal canal, he isolated bluntly the sac, excised it and then sutured the canal with buried catgut sutures without including Poupart's ligament. He wears cotton gloves in operating, uses catgut sterilized by dry heat for buried sutures and avoids antiseptics. The next case was a boy about 8 years old, emaciated to a mere skeleton, suffering from cicatricial stricture of the esophagus, caused by swallowing caustic lye. Gastrostomy was performed and a fistula established by suturing in four rows the line of the anterior wall of the stomach to the margins of the external incision, which was made through the left rectus muscle. No attempt was made to make the opening in the stomach oblique to prevent the escape of food. A small catheter with a funnel-shaped distal end was at once inserted into the small opening. While these operations were being performed, one of his assistants operated in the same room for inguinal hernia, polydactylism, and double equinovarus in a child only a few days old.

Fig. 24.—Italian Hospital, Buenos Aires.

Fig. 25.—Military Hospital, Buenos Aires, Pavilion behind Administration Building.

The hospital has large, fine grounds beautifully laid out and ornamented beautifully with trees, shrubs and flowers. Sisters of Charity have the nursing in charge. The founder of this great home for sick children was Dr. Ricardo Guiterrez, a bronze bust of whom, on a marble pedestal, graces the little garden in front of the hospital.

BRITISH HOSPITAL.

The British Hospital was opened in 1885, and has since that time provided good care and excellent treatment for thousands of unfortunate sick from all lands (Fig. 16). It is kept in excellent repair and new wings have been built from time to time to accommodate the increasing number of patients who apply for admission. The walls and ceilings throughout the hospital are as smooth as glass, made so by a coating of marble cement. The wards are large, well ventilated and lighted, and are made cheerful and comfortable at this time of the year by open charcoal fires. This hospital has a corps of well-trained English nurses and a competent house physician. Dr. John O'Connor is the senior medical officer and has done excellent work for the institution for many years. I was much surprised to find in looking over the hospital report for last year that his name appeared only among the many in connection with the customary vote of thanks by the board of trustees, when it should have been printed permanently among the names of the managers of the hospital. The hospital makes provision for private cases. It can accommodate 140 patients. During the last year the new admissions amounted to 1,745 and the death-rate was 4.5 per cent. Of 329 abdominal operations 290 patients were cured, one patient was relieved, 13 patients remained uncured, and 16 died. These figures furnish a good proof of the excellence of the surgery practiced here. Among the surgical patients I was shown many patients with tuberculosis of the glands of the neck and appendicitis, all of whom were recovering from the operations to which they had been subjected.

BUENOS AIRES SANATORIUM.

This is an ideal private hospital, built, owned and managed by Dr. Edmund Pfiammer, a German physician who has practiced his profession in this city for nine years. It is situated in a very desirable part of the city and has only recently been completed at a cost of $125,000. It offers to patients the comforts of a home, with all the new improvements of hospital construction, and can take care of 25 patients. A German male nurse, three trained female nurses from Germany, and one trained nurse from England take care of the sick, and a graduate of a German university is the resident physician. Between each two of the private rooms there is a bath room and each room has its own closet. For these rooms patients are charged six pesos ($4.40) a day, and rooms with two beds are paid for at the rate of four pesos ($2.93) a day. The two operating rooms, the Roentgen room, and the laboratory are modern and complete in every respect. This private hospital is the very best place in the city for patients requiring medical or surgical treatment, who are able to pay the moderate charges asked. Dr. Pfiammer has had excellent opportunities to perfect himself as a surgeon since his graduation from the university at Erlangen, as he was for several years assistant in the surgical clinic. His young wife, a born Argentine, of German descent, assists him in his operations and takes great interest in his work.

THEODORE ALVAREZ HOSPITAL.

This hospital (Teodoro Alvarez) is situated in a part of the city called Flores, and is commonly known as the Flores Hospital. It covers with its ample grounds two acres and has 192 beds, 96 for men, 48 for women, and 48 for children. It

was opened May 26, 1901. It consists of six two-story pavilions connected by galleries above the basement floor which are supported by columns, a style of architecture which adds to the beauty of the buildings and materially facilitates the service. The two operating rooms leave much to be desired, and the general aspect of the interior of all the buildings shows a lack of administrative ability. The absence of a working laboratory is a sufficient proof that the members of the attending staff are not deeply interested in the scientific part of their profession. The kitchen, baths, electricity room are the most redeeming features of this otherwise inferior hospital. Most of the patients are Italians. In the surgical wards I found a number of patients of this nationality who in recent quarrels had either been stabbed or shot. The sick are cared for by twenty Sisters of Charity, assisted by a number of young women who dress in the garb of nurses, but who have never had any scientific training to prepare them properly for this work. In the dead house I found two coffins made of rough, thin boards. Curiosity led me to lift off the lid of one of them, when I was shocked by seeing in the interior a small pile of miniature fetuses, from three to six months old, a rich harvest of criminal interference with pregnancy. It is said that criminal abortion is a rather common practice among the rich, and abandonment of infants among the poor. This hospital is supported by the municipality and has no provision for private patients, which, under the present management, is a thing not to be regretted.

Fig. 26.—Lieutenant Colonel N. Antelo, professor of military surgery in the Medical Military School, Buenos Aires.

Fig. 27.—Surgeon General and Military Surgeons, Argentina.

ISOLATION HOSPITAL FOR CONTAGIOUS DISEASES.

This is a most interesting hospital for the medical visitor. It is very advantageously located on the highest elevation in the city, near the Rawson Hospital, Military Hospital, and the two insane asylums, with very extensive and well laid-out grounds, comprising at least ten acres. It consists of twenty-six pavilions and a large two-story administration building, all

Fig. 28.—Children's Hospital, Buenos Aires.

Fig. 29.—Dr. Pfiammer's Sanatorium, Buenos Aires.

built of brick and cement. The pavilions are isolated, arranged in two rows, with a broad graveled street between them. The hospital is under municipal control and is managed by the board of health. In two of the pavilions, one for men, the other for women, I found sixty lepers. From an examination of a number of cases it appeared to me that in the women the tubercular form was the most common, while in the men the two forms of the disease were about equally divided. Dr. Somner, professor of dermatology in the medical college, informed me that the whole number of lepers in Argentina is estimated to be about 1,500. The disease has never been known to affect Indians. After three years' residence in the country Europeans may contract it, but the largest number of lepers comes from the mixed races. There exists no law compelling isolation of lepers; the patients enter and leave the Isolation Hospital as they please. In one ward I found three patients with bubonic plague, all convalescent. In one of the patients the inguinal glands on one side suppurated and the abscess had to be incised; in the other two cases, the glandular swellings disappeared by absorption. A few cases of typhoid fever, scarlet fever, diphtheria and tuberculosis occupied

wards devoted to these diseases, while other wards contained an unusually large number of venereal cases. The ambulance service, disinfection plant and laboratory are a credit to this humane beneficent institution. The nursing is in charge of twenty-four Sisters of Charity. Since the terrible epidemic of yellow fever in 1872, this disease has not originated in Argentina. Vaccination is compulsory and the bovine virus is produced under the direction of the board of health, and is distributed gratuitously, and every care and precaution are exercised to stamp out smallpox which has so often cropped out and ravaged different parts of the country.

If I had to offer any one criticism concerning the management of the hospitals of Buenos Aires, I would mention the lack of properly trained and well educated nurses as the most striking defect in all of the institutions which are in charge of the Sisters of Charity or any other order of the Roman Catholic church. These sisters are devoted, faithful hard-working women, imbued with the right spirit of humanity and charity, but they can never fill the places of our educated, well-trained nurses until they have been educated up to the same standard in the science and art of nursing, and it will be then, and only then, when we may expect the establishment of successful training schools for women nurses in South America. This, if accomplished, will meet the most important desideratum of the medical profession and the suffering public of that country.

MONTEVIDEO, URUGUAY, Aug. 11, 1907.

(To be continued.)

Clinical Notes

A COMPLICATED CASE OF VESICAL CALCULUS.

H. B. MASTEN, M.D.
AND
KENT V. KIBBIÉ, M.D.
FORT WORTH, TEXAS.

In the following case the patient was referred to us from west Texas for operation. The case had been diagnosed by the home physician as one of vesical calculus.

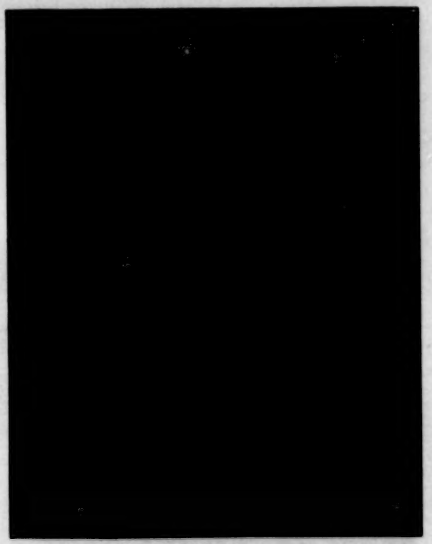
History.—Mrs. V., aged 30, a native of Texas, had had no serious illness since childhood. She had borne five children. The youngest was born Dec. 4, 1901, and she has not been pregnant since. She has never had a miscarriage. The family history was negative. She was perfectly well until six or seven months previously, when she began to suffer from colicky pains in the lower part of the abdomen. The pains were slight at first, but gradually increased in frequency and severity up to three or four weeks before she was seen, when they became almost constant and well-nigh unbearable, being especially severe at the end of micturition.

Examination.—The patient was considerably reduced in flesh, but otherwise in fair condition. A sound introduced into the bladder encountered a stone lying apparently against the mouth of the urethra and gave the patient a great amount of pain. With a soft rubber catheter a small amount of urine was drawn from the bladder. This was bloody and full of pus, the odor was very offensive. The bladder was so tender that no satisfactory bimanual examination could be made. Two Roentgenograms were made. The first was taken through the thickness of the pelvis, the other with the plate inserted in the vagina. The first showed practically nothing; the latter showed not only the stone, but what seemed to be a large hairpin. Patient denied all knowledge of the hairpin, even when shown the plate.

Operation.—Under ether anesthesia the bladder was opened by a colpocystotomy, and a stone, decidedly larger than we had expected, judging from the size of the picture on the *x*-ray plate, was found, and, moreover, the stone was firmly anchored, both points of the pin being imbedded in the tissues at the base, while the curve of the pin was entirely outside of the bladder. After considerable effort, the points of the pin were withdrawn from the tissue, the stone partly crushed and the remainder broken into two pieces and one part loosened from the pin. The other shaft of the pin which still held one piece of the stone was then seized, and after using considerable force the pin and stone were withdrawn from the bladder. The other half of the stone was then easily removed. On account of the severe cystitis the vesico-vaginal cut was left open. The patient made an uneventful recovery.

Subsequent History.—The following history concerning the pin was elicited from the patient some time after the operation: Some six or seven months previous to coming to us she had suffered from some ailment about the vulva and vagina which produced an intense itching, and one night while lying in bed she had attempted to relieve this itching by scratching the parts with a hairpin. The pin while inserted in the vagina had slipped from her grasp, and she never knew what became of it, had never thought of the pin as being the cause of her subsequent trouble.

The idea of taking an *x*-ray picture with the plate inserted in the vagina, while it probably has been done



Vesical stones attached to hairpin.

before, was original with us. The plate was protected with black paper and inclosed in a fish bladder. The exposure was four minutes, which was too long, as the plate was somewhat overexposed.

A CASE OF RUPTURED UTERINE SINUS.

ANNIE LEE HAMILTON, M.D.
Visiting Physician Maternity Ward, New England Hospital.
AND
FRANKLIN G. BALCH, M.D.
Assistant Visiting Surgeon, Massachusetts General Hospital.
BOSTON.

The following case occurred during the service of Dr. Franklin G. Balch at the Massachusetts General Hospital. A rather careful search of the literature has failed to reveal a similar case, although it seems prob-

able that the condition may occur in any case in which there are strong adhesions.

Patient.—N. M., aged 29, married, unipara, a strong young Irish woman, had always been well.

History.—There was no history of previous illness. The patient was seven months pregnant but menstruation had not ceased during pregnancy. Jan. 31, 1906, the patient entered Boston Lying-in Hospital complaining of much pain and was supposed to be in labor. There was a history of abdominal pain for six weeks, not localized, and not sufficient to cause her to go to bed. The evening before entrance, the pain became very sharp and severe. The abdomen soon became tender and hard, the patient was unable to take a long breath and could not lie down with any comfort. She vomited four times. There were no urinary symptoms, the bowels moved the previous night. The patient was not in labor and was immediately transferred to the Massachusetts General Hospital.

Examination.—The examination made at 6 p. m. revealed the following: The woman was very pale, face was pinched, mucous membranes were pale. There was considerable dyspnea, the patient was comfortable only when sitting up. The heart showed systolic murmur at apex, otherwise nothing unusual. The abdomen was distended, hard and tense, with a symmetrical tumor extending in the median line above the umbilicus and filling the abdomen—evidently a pregnant uterus. Fetal heart sounds had ceased. The abdomen was tender all over especially in the right upper quadrant. Temperature was 100.6 F., pulse 110. Blood count: Whites 14,000. A diagnosis of probable appendicitis was made and the patient was prepared for immediate operation.

Operation.—The uterus filled the abdomen so completely that a median incision seemed inadvisable and as the greatest tenderness was on the right an incision four inches long was made over the outer border of the right rectus muscle in the appendix region. The muscle was retracted and the peritoneal cavity was opened with escape of much free, fresh blood. The abdomen was full of blood with a few clots, which were sponged out, and the cavity explored. A seven months pregnant uterus was found. The possibility of an additional extrauterine pregnancy was here thought of, but a careful examination of the ovaries, tubes, appendix and all abdominal viscera revealed nothing abnormal. The hemorrhage had apparently stopped. The wound was closed with through and through catgut sutures, a drain was left in and the patient was put to bed in poor condition.

Postoperative History.—She was given "shock enema," heat was applied, salt solution was given by rectum, hypodermoclysis was performed, bed was elevated, etc. The patient recovered quickly from ether but grew restless, thirsty and blanched. Her pulse rose to 140, but was of fairly good character. The dressing stained badly and at 1 a. m. the patient was again etherized and a long median incision made. The abdomen had refilled with blood. The uterus was delivered into the wound and the abdominal organs were thoroughly explored. A bleeding point was found on the posterior surface of the uterus very low down and impossible to reach without emptying the uterus. An incision was made into the anterior surface of the uterus and a dead fetus was delivered. This incision was sutured with through and through catgut stitches and after contraction had taken place the fundus was tipped forward. On the posterior wall near the cervix was a large open bleeding venous sinus, with intestines bound together with adhesions, near hemorrhage. The bleeding was controlled by three chromicized catgut sutures and a dry dressing was applied. The patient recovered quickly from ether, but despite all stimulation became pulseless at 4 a. m. and died at 6:45 a. m.. The autopsy showed nothing beyond what has been reported.

Postpartum Hemorrhage.—Gossett, in the *American Practitioner and News*, states that in postpartum hemorrhage the natural tendency of the physician is to forget all other risks in his attempts to check the bleeding. By so doing, he may save his patient from death from hemorrhage only to have her die a few days later from infection.

TWO CASES OF TYPHOID SPINE.

PRESCOTT LE BRETON, M.D.
BUFFALO, N. Y.

CASE 1.—H. W. M., male, aged 37, was referred to me by Dr. J. W. Putnam, in March, 1906. His family and personal histories were very good.

History.—Seven months before coming to Buffalo for treatment this man had an attack of typhoid, ordinary in type. He remained in bed for a month and not long after was able to return to his business. He noticed that his back was very tender and stiff, and at times painful. This condition continued and the stiffness grew slowly worse, causing him to be very guarded in all his movements. About three months after convalescence he slipped and wrenched his back. He was compelled to go to bed and the muscle spasm resulting sometimes caused him to scream with pain.

Examination.—On examination a straight spine was found, with absence of the normal lumbar lordosis. There was considerable tenderness all over the lumbar region and very marked muscle spasm. On standing up without crutches he was compelled to relieve the spine of weight by placing his hands on his knees. No motion could be demonstrated in the lumbar and dorsal regions and any attempt at motion caused great pain. The knee jerks were active, but ankle clonus was absent; sensation normal; sphincters unaffected.

Treatment.—The treatment adopted was absolute rest in bed with weight and pulley extension for each leg. Improvement was soon manifested and in two weeks' time he was able to sit up in bed for his meals. The muscle spasm had largely abated and local tenderness had disappeared. Two weeks later he was taken home, wearing a stiff leather jacket.

Subsequent History.—In four months he returned for examination. The contour of the spine was normal, the lumbar lordosis having returned. Muscle spasm was absent, although the knee jerks were lively. The spinal motions were about normal, flexion alone being limited. He was feeling well and had gained twenty pounds in weight. A letter received six months later stated that he had entirely recovered and could do some physical work.

CASE 2.—E. H. O., male, aged 40.

History.—His attack of typhoid, in November, 1905, ran a rather severe course and ended in six weeks. On trying to sit up he noticed much pain and lameness in the lower back. This continued and allowed him to do very little work. Three months later, the pain became acute following an exposure to the weather. The pain was most severe at night, radiating over both hips and the lumbar region. He was treated by his physician with traction to each leg.

Examination.—Three weeks after the onset of acute symptoms he was referred to me by Dr. J. W. Putnam. The patient was a tall, thin man with facial expression showing constant pain. He needed assistance to sit up and he braced his back by resting his hands on the arms of a chair. The lumbar lordosis had disappeared and the spine was straight and rigid. Muscular spasms resisted every motion. There was no tenderness over the back, but pressure on the abdomen increased the pain; knee jerks overactive; a faint ankle clonus.

Subsequent History.—Before long he was able to stand and to walk a little way in a leather jacket. Two months later, little pain was complained of, and the reflexes were normal. The spine had resumed its normal contour and flexibility was largely regained. Various letters during the past year reported slow but steady progress. There is still complaint of weakness and occasional pain after exertion. It is probable that in time recovery will be complete.

23 Irving Place.

Diet in Hepatic Disorders.—Richardson, in the *Alabama Medical Journal*, states that the diet in hepatic "insufficiency and hyperactivity" should be moderate in quantity, with a minimum of proteid, say about 6 grams of nitrogen a day, with some fat administered in the form of cream, unsalted butter, or olive oil, and sufficient carbohydrate to bring the total diet to about 10 calories per kilogram of body weight.

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[For other information see second page following reading matter.]

SATURDAY, NOVEMBER 2, 1907.

EXPERIMENTAL STUDY OF TOXIC ANEMIA.

There are certain poisons of the general character of toxins and of the chemical constitution of lipoids, the study of which, as yet in its beginning, may yield results of practical importance, especially as regards anemia. The closer knowledge of these bodies starts with the demonstration by Kyes that certain toxin-like substances in cobra venom are so changed by combination with lecithin that they become very powerful laking agents. An important characteristic of these cobra lecithids is that they act as antigens and under proper conditions produce in the animal organism specific antibodies. Similar lecithids, or toxolecithids as they are called, have been obtained also from the secretions of bees and certain arachnids. Closely connected with these lecithids are certain stable, hemolytic substances which may be obtained from extracts of various organs of mammals by heating and extraction of the coagulated material with alcohol or ether (Korschun and Morgenroth). Even blood serum has been found by Woelfel to contain substances of this kind. They do not act as antigens, but their action is said to be suspended by normal serum in small quantities, at least in some cases. Recently Friedemann obtained a toxic substance from the juice of a pancreatic fistula, which, on combination with lecithin, becomes strongly hemolytic, and similar substances have been obtained by others from the pancreas of both man and dogs. These substances have the power to lake the corpuscles of the species from the organs of which they are obtained and consequently the idea at once suggested itself that under pathologic conditions they may produce so much destruction of red cells as to cause anemia. Tallqvist has obtained a substance of this general nature from *Bothriocephalus latus* with which he produced severe anemia in animals both by injection and by feeding; hence a strong likelihood that it is the actual cause of the bothriocephalus anemia.

Impressed with the pathogenic possibilities of these lipoids and lecithids, Morgenroth and Reicher[1] have undertaken certain investigations into their action in the hope that indications might be obtained of practical use in the treatment of toxic anemias. They used in their experiments the hemolytic toxolecithid of cobra venom, intravenous injection in rabbits of suitable doses of which gives rise to a rapidly progressive anemia; they then demonstrated that cholesterin, which is known to inhibit the lytic action of the cobra toxolecithid in the test tube, also prevents the development of anemia when introduced in suitable quantities into the stomach in the treated animals. The tentative use of cholesterin in parasitic anemias and even in anemias of unknown cause is consequently provided with a rational basis. The facts that cholesterin is non-toxic and easily absorbed from the intestinal tract will facilitate greatly its eventual therapeutic use.

1. Berl. klin. Wochschr., Sept. 23, 1907, 1201; abstracted in The Journal, Oct. 26, 1907, p. 1480.

MEAT INSPECTION AND THE SALE OF COOKED MEAT.

Excessive laxity in sanitary matters, as in other human affairs, is often followed by excessive severity. A recent instance in this country concerns the method adopted for disposing of the meat from slightly diseased animals. Scientific veterinarians and pathologists are practically agreed that the existing regulations in some places are extreme. The utter condemnation of infected carcasses already entails an expense of nearly $3,000,000 annually on the meat industry and is likely to reach two or three times this sum in the near future. Measures that would tend to diminish this large destruction of property without at the same time endangering in any degree the public health seem desirable, not only on economic grounds but as likely to aid the work of sanitation itself. Too rigorous and too sweeping enactments are likely to defeat the very ends aimed at because of the opposition that they arouse, the unlawful financial gains that they make possible and the general impairment of confidence in the makers of sanitary regulations that they engender.

On page 1483 of this issue Dr. C. H. Stiles has pointed out the great advantages possessed by the German system of dealing with the meat problem as contrasted with our present method of federal inspection. By the German system the meats may be divided into three classes: First, those that can be marketed without restriction; second, those that could not safely be placed in the first class, but could be sold without danger if properly cooked; and, third, those that are to be unconditionally condemned. The recognition of the second class has the great merit of minimizing the property loss, of diminishing the opposition of meat dealers to reasonable sanitary regulations, and of placing within reach of the poorer classes a considerable quantity of entirely wholesome and palatable food. The method is particularly applicable to the handling of meat from cattle showing relatively slight local tuberculous lesions. If, after the affected portions are destroyed, such meat is cooked under proper supervision it is in no degree unwholesome, is tender and juicy, as shown by many years of experience at Berlin.

Stiles has also directed attention to another advantage of this procedure: If the process of eliminating tuberculous cattle from a herd is made as easy and inexpen-

sive as possible for the owner, as any reasonable person will maintain that it should be, then the campaign against bovine tuberculosis will be facilitated. There is certainly no scientific warrant for the practice of destroying out-of-hand the entire carcasses of animals responding to the tuberculin test, and the laws in certain parts of the United States that require this are likely to do harm rather than good to the permanent interests of the public health. The adoption of some procedure similar to the European system of meat inspection already alluded to would do much to wipe out the effects of such unscientific legislation and would place the meat industry on a more reasonable footing. The position taken by Stiles will undoubtedly receive the cordial support of the leading sanitarians in this country.

TETANUS BACILLI IN THE HUMAN INTESTINE.

It is well known that one of the natural habitats of the tetanus bacillus is the digestive tract of horses, and probably of other herbivorous animals; some investigators have found tetanus bacilli in as high a proportion as 50 per cent. of samples of fecal matter from horses. These bacilli are probably obtained by the animals from their food, for it has been shown that tetanus spores in a viable condition may be present on hay and grass. Less well known is the fact that the feces of normal men may contain tetanus bacilli or spores, but Pizzini found that no less than 5 per cent. of specimens of human feces from different individuals will produce tetanus when injected into susceptible animals.

The source of these tetanus bacilli found in human excreta seems to be in uncooked vegetable food, for Rabinowitsch[1] has been able to demonstrate the presence of virulent tetanus spores on most of the samples of fresh strawberries purchased from venders in the streets, and also in one of five lots of fresh cherries. Presumably all the other forms of fruits, berries and vegetables that are exposed to dust and dirt either during their growth or in the market, and which are eaten uncooked, introduce tetanus spores in no inconsiderable numbers into the human economy. In view of the fact that such invasion of the digestive tract seems never to give rise to tetanus, so far as clinical observations show, it must be assumed that the defensive mechanism of the human digestive tract is adequate to prevent infection under these conditions. According to Rabinowitsch's studies, the chief defensive agent is the hydrochloric acid of the gastric juice, which, when present in normal amounts, is capable of depriving the bacilli of their virulence, and of destroying their toxins. It would seem possible, however, that in persons with disturbed digestive tracts, and especially when ulcerative lesions exist in the intestines to afford a place open for invasion, that occasionally tetanus infection might occur from these spores taken in with the food and give rise to "cryptogenetic" or "idiopathic" tetanus. If such infection does occur, however, it seems so far to have escaped clinical detection.

Rabinowitsch observed that animals which had received large doses of tetanus bacilli by mouth, although not developing any of the usual manifestations of infection with *Bacillus tetani*, often suffered from a chronic and eventually fatal marasmus which was sometimes associated with peculiar cerebral symptoms and local contractures. This observation suggests that if tetanus bacilli should succeed in multiplying within the intestinal contents, even without invasion of the tissues, they might cause serious harm to the host, and that possibly such an intestinal intoxication may be the cause of some obscure disease conditions.

1. Archiv. f. Hygiene, 1907, lxi, 103.

THE PATHOLOGY OF ATHLETICS.

The football season was scarcely opened when, during the first week in October, it was announced that there had been a death from the game. Almost at the same time came the news that one of the most prominent members of a team from a minor college, who attracted much attention last year, had had to have his leg amputated as the result of an injury to his knee received in one of the games of last season. This lesion, not thought serious at first, in spite of the best surgical care had never healed properly and eventually a septic condition developed so threatening to life as to demand the removal of the leg. Those who are in the inner circle of football information are apt to know that already there has been a number of more or less serious injuries among the candidates for the football teams at the various universities. Because they did not occur in actual games they have not found their way into print. Broken collar-bones are especially favorite lesions of the early football season, and one way for eliminating candidates for the team is through the door of the hospital. It was hoped that the open game introduced by changes in the rules would take away much of the stigma that has attached to the sport because of accidents, but that hope has proved illusory, and good authorities who have watched the game for many years are inclined to think that while injuries may be fewer under the changed conditions, those that do occur are likely to be more serious.

The question that naturally arises is whether the game is worth the candle. An interesting phase of this question has recently been presented to one prominent eastern college by the offer of a bequest of $1,000,000 on condition that the college in question gives up intercollegiate contests in athletics. All the educational world is waiting with rather breathless interest to see what will be the result. It is true that the college involved—Swarthmore—does not belong to either "the big four" or "the big six," and yet during the time when

the student, the recent amputation of whose leg was reported, was playing on the team it succeeded in winning victories over teams that would be ranked among the first six if not the first four of eastern colleges. Whether the temptation to secure a million will prove of sufficient weight with the faculty to lead them to forbid athletic contests with other colleges remains to be seen. It will at least be interesting to note whether a change of policy which danger to a degree involving loss of life and limb could not bring about will be adopted for a monetary consideration.

There is a growing feeling that the solution of many of the evils of college athletics at the present time lies in the prohibition of intercollegiate contests. For these a few young men devote practically all their time to training during certain periods of the year, while the large mass of students, though taking great interest, simply look on. The real end of college athletics is just so much the more gained the greater the number that take part in them. The present conditions which are nearly all directed to the formation of teams of high-grade specialists for certain intercollegiate contests secure this end to the least possible degree. Members of university faculties are beginning to believe that if intercollegiate athletics could be abolished more interest would be taken in an active way in athletic sports by many more of the students. At the present time there is encouragement to take part in the games only for those who probably least of all require such physical training. Instead of proper division of efforts the tendency is to narrow still further the opportunities of the ordinary student to secure the pleasant healthful exercise that open air games give more surely than any other form of muscular exertion. Games for their own sake have almost gone out of vogue in the larger colleges and universities. This is an unfortunate development, a true pathologic condition, for youth naturally likes to play. While making a few athletic specialists colleges are doing but little for the great mass of their students toward producing a healthy body that will properly aid a healthy mind. These are the points in the pathology of athletics as at present conducted that are likely to be of interest to physicians, and the conclusions from them are sure to point to a reactionary tendency so that college faculties may be led to see the advisability of more home athletics and less mere team work and devotion to training for intercollegiate contests.

INCORPORATION LAWS AND MEDICINE.

At the recent meeting of the National Civic Federation in Chicago particular attention was called to the lack of proper safeguards against the chartering of corporations and to the fact that the privileges thereby given are often grossly perverted and misused. That this is true regarding medical institutions is evidenced by the numerous low grade medical schools of every pathy known and unknown which are constantly springing up, to say nothing of the chartering of "Medical Institutes," of "Health Universities" and of "Hospitals" whose chief function seems to be the direct swindling of the public and the granting of certificates stating that certain "doctors" have been appointed on the "attending staff" or have taken "special courses."

A recent investigation has revealed the fact that only a few states have any safeguards about the chartering of medical colleges. In New York the Board of Regents has the authority to issue charters to medical colleges as well as to revoke them for cause. In Massachusetts in order to grant degrees the college must have authority from the general court. In New Jersey the charter must be obtained from the legislature. The District of Columbia has an excellent law, requiring that medical colleges shall have received a permit from the Commissioners before they can grant degrees. In a few states, while there are no special laws, the practice has been established of referring these matters to the board of medical examiners. In the great majority of states, however, it seems that a charter can be obtained by any coterie of men who pay the prescribed fee. In Baltimore only a few years ago an institution was chartered and given authority to grant degrees in arts, science, theology, law and medicine, the incorporators of which were grossly ignorant, one of them, it is reported, even making his mark when signing the articles of incorporation. Needless to say, within a short time thereafter each of these incorporators was able to sign his name with degrees *ad nauseam*. The institution is still in existence.

While it is true that the low grade medical school is attended chiefly by poorly educated students who are attracted by the school's low requirements, nevertheless many a medical student, misled by the glowing descriptions in the printed announcements of one of these colleges, has spent his money, completed the "course of instruction" and been graduated before fully appreciating that the "equipment and facilities" of the college were mostly on paper and that he could have received a much better training in a high-grade medical college for practically the same amount of time and money.

The public has the right to protection from the pernicious "health universities" and "medical institutes" which are often operated by men who are not graduates in medicine or even licensed to practice, and whose chief purpose is to get the patient's money rather than to cure his ailment.

The public rightfully looks to the medical profession to check such evils. Heretofore the fight has been with these institutions after they have become full grown. A more effective measure would be to prevent their birth. To do this requires the securing of laws directing that all medical organizations before being chartered should first be fully investigated by the medical officials of the state. The reputability of medical colleges and the integrity of "health universities" can be decided only by

medical men and, before such institutions are chartered, in the interest of the public, their means and intentions should be carefully investigated by the State Board of Health or the Board of Medical Examiners.

PHYSICIAN, SCIENTIST, NOVELIST.

Few men of our generation, if indeed there are any in America, have conferred more honor on the medical profession in this country than Dr. S. Weir Mitchell of Philadelphia. The *Book News Monthly* for October is called the S. Weir Mitchell Number and, while providing an excellent account of a distinguished colleague's life work for those who know him but slightly, will add to the information that may be in the possession even of those who know him best. Mr. Harrison S. Morris in the opening study of Dr. Mitchell says: "They said of Franklin that he was 'many-sided' and with truth; but the phrase fits like a glove on his brilliant successor in the old town so much adorned by both, and were it not that even a better might be coined for the later doctor I should be bold enough to dispossess the earlier. On the whole 'many-gifted' seems almost to describe Dr. Mitchell better." Farther on Mr. Morris says: "Intuition and sympathy joined to intellect are the essentials of both the physician and bard, and when these are united at a high level they may make a great doctor or a great poet or a combination of the two in one." This rather felicitous expression may well stand as the summing up of Dr. Mitchell's twofold character as a writer and a physician. Physicians who are interested in knowing how a diligent physician can use his leisure to advantage, or at least, besides following a favorite vocation, may pursue an avocation which means quite as much for his friends and probably more for himself, should read this series of articles on our Philadelphia colleague. Mr. Talcott Williams, himself distinguished in American literary circles, has written on Dr. Mitchell as a writer of fiction, and Mr. Richard Watson Gilder, the editor of the *Century*, on Dr. Mitchell's poetry. The critics are able, yet the praise is unstinted. While the series of articles tells most of Dr. Mitchell the writer, it does not neglect either his career as a physician or his success as a scientist. The little story which Dr. Mitchell himself is so fond of, with regard to the gentleman from America who with ailing nerves went for advice to a celebrated Italian specialist in nervous diseases, is retold very happily. "But you are from America," said the Italian nerve specialist. "Yes." "Why not then take the Vermichelli treatment?" "What's that?" asked the curious American. "What!" was the reply, "You don't know the treatment of the famous Dr. Veir Mitchell of Philadelphia?" And then the American saw light and came home to be cured. The medical profession in this country hopes long to be proud of a colleague who has proved so capable in so many departments of human endeavor, and the example of whose hard-working career furnishes ever renewed motives for emulation.

ILLEGITIMATE PREGNANCY AND THE EMPLOYER'S LIABILITY.

A somewhat curious medicolegal question has been sprung on our British *confrères* through the new Workmen's Compensation Act. An unmarried housemaid suffered from a two months' incomplete abortion, and "staggered" the attending physician by suggesting that, as the miscarriage was in her opinion attributable to overwork (she being a "workman" within the meaning of the act), she considered her mistress responsible for her illness and for the medical expenses attached thereto. The physician reporting the case in the *British Medical Journal* for October 5 says, "The existence of a disability or weakness in a workman would render an employer chary of engaging him, but if he did engage him, any injury that man sustained by reason of his disability would not absolve the employer from an action against him for compensation. The normal end of pregnancy is full term delivery; abortion is abnormal and in that sense accidental. The 'accident' occurs during service under her employer and prevents the girl from working." Having regard to the circumstances, he asks what would be the likely result in the event of an action at law, especially if the weight of evidence proved that the abortion was directly due to her work. The *British Medical Journal*, in reply, "is advised" "that the court might not improbably take the view that the employer was liable." It seems to us that a very important point has been overlooked. If the woman had been a married woman the contingency of pregnancy as a "disability or weakness" might reasonably have to be taken into consideration by the employer. It is possible that even if an unmarried woman were already the subject of the "disability or weakness" of pregnancy at the time of engaging herself, it might be obligatory for the employer to take the consequences of a lack of foresight in engaging her, as he would have to do, for instance, in the case of a male employé with a rupture. But if, being unmarried, the girl became pregnant after the commencement of her service, we should think that "contributory negligence" might as effectually be pleaded in estoppal as in the case of the usual exclusion from benefit of accidents consequent on alcoholism or improperly acquired venereal disease.

Medical News

ALABAMA.

Personal.—Dr. Shirley Bragg, Montgomery, state prison and cotton mill inspector, is reported to be seriously ill with rheumatism.——Dr. Henry M. Martin, Anniston, has been elected physician of Calhoun County.——Dr. William B. Arberry, Jacksonville, has been elected physician to the county almshouse.

Violation of Prohibition Law.—In the case of the state against N. S. Smith, Selma, the defendant is reported to have been found guilty of violating the prohibition law of that city and fined $75.——P. L. Hagler, Anniston, is said to have been arrested in Birmingham on the charge of violating the Sunday prohibition law by prescribing liquor on that day.

Medical Colleges Open.—The forty-second annual session of the Medical Department of the University of Alabama, Mobile, opened October 8 with addresses by the president of the university and Dr. Henry A. Moody of the faculty.——The fourteenth annual session of the Birmingham Medical College began October 2 with an address by Dr. Benjamin L. Wyman, dean of the faculty. The following faculty changes are an-

nounced: Dr. James A. Edmondson, professor of dermatology; Dr. Kenneth Bradford, professor of microscopy; Dr. Joseph D. Heacock, associate professor of medicine and hygiene; Dr. Charles Whelan, associate professor of obstetrics, and Dr. George A. Hogan, professor of minor surgery.

ILLINOIS.

Communicable Diseases.—The schools of Round Prairie have been closed on account of the prevalence of scarlet fever.——Scarlet fever is reported at Tuxhorn.——Several cases of typhoid fever are reported in Galesburg and six Sisters of Providence, teachers in St. Joseph's Academy, are said to be ill with the disease.——An epidemic of typhoid fever is reported at Beardstown.——Typhoid fever in severe form is prevalent at Duquoin.

Personal.—Dr. Eli G. Davis, Lewistown, was injured in a runaway accident, October 17.——Dr. C. Richard Lockwood, Atwood, has sold his practice and will soon leave for Europe.——Dr. John E. Covey, Bloomington, who was recently operated on for cancer of the stomach, is reported to be in a critical condition.——Dr. Edward A. Foley, Woodstock, formerly assistant physician in the Illinois Northern Hospital for the Insane, Elgin, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Kankakee.——Dr. Franklin E. Wallace, Monmouth, announces his removal to Pueblo, Colo.

Chicago.

Honor Sister Superior.—As a tribute to Sister M. Raphael, for 28 years superior of Mercy Hospital, the medical staff, internes and alumni gave her a linen shower, October 24. The linen will be devoted to furnishing the new addition to the hospital, which will be open about Feb. 1, 1908.

Gynecological Society Election.—At the annual meeting of the Chicago Gynecological Society, held October 18, the following officers were elected: President, Dr. Joseph B. DeLee; vice-presidents, Drs. Charles E. Paddock and Rudolph W. Holmes; secretary, Dr. Henry F. Lewis; treasurer, Dr. Charles B. Reed; editor, Dr. Frank W. Lynch; pathologist, Dr. George Schmauch, and councilor, Dr. Emil Ries.

Mortality of the City.—During the week ended October 26 there were 500 deaths reported, equivalent to an annual rate of 12.59 per 1,000. Among the chief causes of death were: Pneumonia, 68; tuberculosis, 62; violence, 45; heart disease, 43; nephritis, 38, and acute intestinal diseases, 35. Of the communicable diseases diphtheria caused 14 deaths; typhoid fever, 10; scarlet fever, 6, and measles, whooping-cough and influenza, each one death.

Personal.—Dr. Nicholas Senn returned from his trip around South America, October 25.——Dr. Victor J. Baceus has been elected a member of the French Association of Surgery and of the French Association of Urology.——Dr. Albert J. Ochsner was the guest of honor at a dinner given by Dr. John C. Morfit, St. Louis, October 18, and in the evening Dr. Herman Tuholske gave a reception at his home for Dr. Ochsner.——Dr. William H. Wilder, who has been seriously ill, is reported to be improving.

INDIANA.

Personal.—Dr. Kenneth I. Jeffries, for several years a member of the staff of the Eastern Indiana Hospital for the Insane, Richmond, has resigned.——Dr. James E. Taylor, Richmond, stumbled and fell October 22, severely injuring his cheek and nose.

State Society Journal.—At a meeting of the councilors of the Indiana State Medical Association, held in Indianapolis, October 15, it was decided to establish an official monthly journal for the society, beginning January 1. Dr. Albert E. Bulson, Jr., Fort Wayne, secretary of the state medical association, was selected as editor. The name of the paper is to be *The Journal of the Indiana State Medical Association.*

Young Doctors Organize.—Fifty of the younger physicians of Indianapolis held a meeting October 17, to take the preliminary steps toward organizing a society of the younger members of the profession. The following temporary officers were elected: President, Dr. Charles F. Neu; vice-president, Dr. Paul B. Coble, and secretary-treasurer, Dr. John R. Thrasher. A committee of five was appointed to complete arrangements for permanent organization.

IOWA.

Health Officers to Meet.—The State Board of Health has arranged to hold a conference of health officers, mayors and township clerks at Des Moines, November 12 and 13.

Illegal Practitioners in Trouble.—Mrs. Mary Cashman, Estherville, is reported to have been indicted by the grand jury for practicing medicine without a license.——F. M. Milled, "a chiropractor" of Marshalltown, is said to have been found guilty by the grand jury of practicing medicine without the proper certificate from the State Board of Health.——Charles Ray Parker, head of the "Parker School of Chiropractic," Ottumwa, has been indicted by the Wapello County grand jury on the charge of practicing medicine without a license.——C. A. Quackenbush, alias "Dr. Fowler," who was arrested October 18 at Raymond, on the charge of practicing medicine without a license, is said to have been fined $50 and costs, the latter amounting to $11, October 21.

MARYLAND.

Morbidity.—Typhoid fever is reported to be prevalent in Baltimore, 56 cases being on record for the last week, with 7 deaths. Deaths from pneumonia are increasing, 22 being reported for last week. Tuberculosis caused 27 deaths.

Osler Memorial Building.—The building committee of the Osler Memorial Building announces that $14,000 has been collected in addition to the $5,000 which constituted the Osler Memorial Fund. This leaves $81,000 still to be collected.

State Hospital for Consumptives.—The work on the State Hospital for Consumptives, Sabillasville, is proceeding rapidly and the institution will be open for the reception of patients early in the year. The site is excellent, having an altitude of 1,600 feet. The medical members of the board of trustees are Drs. H. Warren Buckler, Baltimore; Charles H. Conley, Adamstown; Guy Steele, Cambridge, and Charles M. Ellis, Elkton. The superintendent of the institution is to be Dr. Bayard Crane, who is at present abroad, studying the best method of treatment of tuberculosis.

MASSACHUSETTS.

Ether Day.—On the afternoon of October 16, the sixty-first anniversary of the surgical use of ether was celebrated by the Massachusetts General Hospital. Lantern slides were shown in the lower amphitheater of the out-patient department and tea was served in the old operating room. The new orthopedic ward was opened for inspection.

Personal.—At the fifty-fourth annual meeting of the Thurber Medical Association, held in Milford, October 17, Dr. Charles H. Randall, Franklin, was elected president.——Dr. Harry A. Cotton, Hathorn, has been appointed medical director of the New Jersey State Hospital for the Insane, Trenton, to succeed Dr. John W. Ward.

Tuberculosis.—The exhibit of the Holyoke Society for the Prevention of Tuberculosis attracted wide attention and it is probable that a movement will be inaugurated to establish a sanatorium in or near the city.——An exhibit, loaned by the National Association for the Study and Prevention of Tuberculosis has been made in Lawrence, under the auspices of the city government, the board of health and the trustees of the White fund and the Lawrence Medical Club.

MISSISSIPPI.

New Sanitarium.—Dr. Joseph T. B. Berry, Brandon, has recently completed a private sanitarium with accommodation for 12 or 15 patients.

Personal.—Dr. William H. Aikman, Natchez, has been appointed health officer of Adams County.——Dr. Walter S. Sims, superintendent of the Mississippi Institution for the Blind, Jackson, has withdrawn his resignation.——Dr. T. H. Nichols has been appointed physician to the Agricultural and Mechanical College, Alcorn.——Dr. Julius Crisler, Jackson, has been appointed assistant surgeon at the State Hospital for the Insane.

College Notes.—Mississippi Medical College, Meridian, opened for its second term October 2. The opening address was made by Dr. William W. Hamilton, and addresses by Drs. Nathan L. Clark, Samuel H. Hairston, R. L. Robinson, O. W. Bethea and John R. Tackett followed.——The organizers of the College of Physicians and Surgeons, Meridian, have decided on a site for their college and hospital and expect to expend between $50,000 and $75,000 on immediate construction work. The following members of the faculty have thus far been selected: Dean, Dr. Robert L. Turner; secretary, Dr. Frank L. Walton; treasurer, Dr. J. H. Rush; and Drs. H. F. Tatum, Cecil Champenois, Martin V. B. Miller, James Bennett, Jesse W. Seale, Thomas E. Royals, Sara A. Castle, Kutcher T. Klein and Eugene G. Denson.

MISSOURI.

Growth of Society.—The St. Louis Medical Society now issues a weekly bulletin, which gives not only the programs of meeting, but details in brief the papers which are read before

the society and the discussion thereon. In addition, it gives news items and candidates proposed for membership. The membership of the society October 3 was 638.

Communicable Diseases.—The public schools of Lamonte have been closed and public meetings prohibited on account of the prevalence of diphtheria.——Five cases of smallpox are reported in St. Joseph.——On the west side of Kansas City 20 cases of diphtheria with five deaths have been reported.——On account of the prevalence of diphtheria, the schools of Pilot Grove have been closed and all public gatherings prohibited.——Smallpox has developed in the St. Louis Protestant Orphans' Asylum, St. Louis, where about 20 cases have been reported.

New By-Laws Adopted.—The St. Louis Medical Society, at a meeting October 5, completed the consideration of a new organic law. The by-laws as adopted have been studied and revised, and made to conform not only to all requirements of the state and national bodies, but also to the local needs. A section for legal defense for the membership was adopted after considerable discussion. The society employs an attorney or attorneys who, under the supervision of a committee on legal defense, will conduct the preliminaries in civil cases up to the time of trial without expense to the accused. The new laws will become effective January 1.

NEW JERSEY.

Personal.—Dr. J. Edward Blair, Burlington, is reported to be critically ill with typhoid fever in the Medico-Chirurgical Hospital, Philadelphia.——Dr. Thomas M. Pascal, Newark, who has been ill with septicemia, is reported to be improving.

Communicable Diseases.—Scarlet fever and diphtheria are said to be prevalent in Woodbury.——The public schools of Milltown have been closed on account of the prevalence of scarlet fever.——Three cases of scarlet fever were discovered October 9, at Newark.——Typhoid fever is reported to be epidemic at Dundee Lake, Bergen County.

Society Meeting.—The ninth annual meeting of the Tri-County Medical Association of Morris, Sussex and Warren counties was held in Morristown, October 8, when the following officers were elected: President, Dr. Alvan C. Van Syckle, Hackettstown; vice-presidents, Drs. Jackson B. Pellett, Hamburg, and James Douglas, Morristown; secretary, Dr. Charles P. Smith, Washington; and treasurer, Dr. Frederick W. Flagge, Rockaway.

Tuberculosis Sanatorium Open.—The new State Sanatorium for Tuberculosis at Glen Gardner was formally opened by the governor, October 25. The buildings of the sanatorium are located nearly 1,000 feet above sea level. Four buildings have been completed; an administration building, a service building and two wards, which are completely furnished and ready for the reception of patients. The cost of the institution so far has been a little more than $250,000.

Vital Statistics.—There were 3,405 deaths reported in the state during September. Of these, 698 were due to infantile diarrhea; 346 to diseases of the nervous system; 328 to tuberculosis; 266 to diseases of the heart; 116 to pneumonia, and 111 to cancer. Of the communicable diseases, typhoid fever caused 55 deaths; cerebrospinal meningitis, 43; and the deaths from scarlet fever and diphtheria were lower than the monthly average. The suicides numbered 32.

NEW YORK.

Personal.—Dr. John W. LeSeur, Batavia, has been appointed medical expert of the State Board of Health.

The Tuberculosis Fight.—Large signs bearing the caption, "Tuberculosis," are being put around Lockport by the State Department of Health, calling attention to the ordinance prohibiting expectoration in public places, which offense is punishable by a fine of from $2 to $10. Similar placards have been posted in Oswego.

Erie Railroad Surgeons.—The Association of Erie Railroad Surgeons elected the following officers for the ensuing year: President, Dr. Frank D. Bain, Kenton, Ohio; vice-president, Dr. George H. Witter, Wellsville, N. Y.; secretary and treasurer, Dr. Bertes R. Wakeman, Hornell, N. Y., and executive committee, Drs. Salem Heilman, Sharon, Pa.; Charles E. Sawyer, Marion, Ohio, and Herbert F. Gillette, Cuba, N. Y. The next meeting will be held in Buffalo, N. Y., in October, 1908.

New York City.

Smallpox on Steamer.—A case of smallpox was discovered on the Russian steamer *Estonia*, which arrived from Libau and Rotterdam, October 25. The passengers were being sent to Hoffman Island for observation and the steamer has been disinfected.

Denies McBurney Is Ill.—Mr. Malcolm McBurney states that the report of the illness of his father, Dr. Charles H. McBurney, is incorrect, as his father is in perfect health. He states also that the report of the intention of Dr. McBurney to retire from practice has no foundation.

Staff Appointments.—The following appointments have been made to the staff of the Rockefeller Institute for Medical Research: Dr. Hideyo Noguchi, associate in pathology; Dr. G. W. Heimrod, assistant in biologic chemistry; Dr. W. A. Jacobs, fellow in biologic chemistry; Mr. P. A. Kober, scholar in biologic chemistry, and Dr. R. V. Lamar, scholar in pathology.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended October 19, 306 cases of tuberculosis, with 174 deaths; 324 cases of diphtheria, with 32 deaths; 147 cases of scarlet fever, with 8 deaths; 125 cases of measles, with 4 deaths; 129 cases of typhoid fever, with 17 deaths; 21 cases of whooping-cough, with 6 deaths; 16 cases of cerebrospinal meningitis, with 10 deaths, and 46 cases of varicella, a total of 1,114 cases and 251 deaths.

In the Courts.—Dr. William R. Gillette, formerly vice-president of the Mutual Life Insurance Co., is said to have been found guilty of perjury in the third degree in connection with the legislative investigation of insurance offices, October 25, and sentenced to imprisonment for six months.——Dr. J. Carl Schmuck, Lawrence, is said to have been muleted of damages amounting to $2,000 by Frank Wilson, for injuries received in a collision with an automobile of the defendant.——Dr. Charles L. Dana was given judgment for $1,500, October 18, for the examination of Harry K. Thaw.——Dr. Isaiah Frank, who sued his sister and her husband for $105 for professional services rendered, is said to have had his claim dismissed by the judge, October 18.

OHIO.

Society Election.—The Physicians and Surgeons' Club of Urbana met recently and elected the following officers: President, Dr. Edwin Ludlow; vice-president, Dr. Samuel M. Mosgrove; secretary, Dr. Henry C. Houston, and treasurer, Dr. George F. Brinkman.

Epidemic Diseases.—On account of the prevalence of diphtheria in the western part of Springfield, the Grey Hill school was recently ordered closed.——An epidemic of diphtheria is said to prevail in Logan, where from 45 to 50 cases are said to exist.——Thirteen cases of varioloid are reported from Hamilton.

Appeal Refused.—Governor Harris and Attorney General Ellis heard the appeal of Charles C. Faws from the action of the State Board of Medical Registration and Examination in refusing him a license to practice in Ohio, although holding a certificate from Illinois. The hearing also determined the power of the state board to grant reciprocal certificates. The appellant was refused a license.

Medical Colleges Open.—The Starling-Ohio Medical University, Columbus, opened for its first annual session, since the merger, September 30. Dr. Charles S. Hamilton, chancellor of the school, delivered the address of welcome, followed by Trustee Henry J. Booth, Dr. George M. Waters, dean of the college of medicine, and Dr. H. M. Seamans, dean of the college of dentistry.——Western Reserve University Medical College, Cleveland, opened for its sixty-fifth annual session without formal exercises, October 2.

Personal.—Dr. and Mrs. A. J. Richardson, Summersville, celebrated their fiftieth wedding anniversary October 15.——Dr. E. A. Kelty, Youngstown, who has been absent from the city for seven years, has returned and resumed practice.——Dr. William L. Dick has temporarily succeeded Dr. Thomas G. Youmans as emergency fire and police surgeon of Columbus.——Dr. Robert G. Noble has been elected district physician of Columbus, vice Dr. Harry B. Blystone.

OREGON.

Election.—At the annual meeting of the Marion County Medical Society, held in Salem, the following officers were elected: President, Dr. William H. Byrd; vice-president, Dr. Willis B. Morse; secretary, Dr. Orla B. Miles; treasurer, Dr. W. Carlton Smith, and councilors, Drs. Charles H. Robertson, John N. Smith and H. E. Clay, all of Salem.

Personal.—Dr. Robert C. Yenney, Portland, secretary of the State Board of Health, has been appointed a member of the Portland board of health, to fill the vacancy caused by the resignation of Dr. Esther Pohl, who has been appointed city

health officer.——Dr. Charles J. Smith and family, Pendleton, sailed from New York for Europe, November 1.——Dr. Robert C. Coffey, Portland, has acquired full ownership of the Northern Pacific Sanatorium.

College Opening.—The Medical Department of Willamette University, Salem, opened September 17 for its forty-second annual session. The opening address was made by Dr. John N. Smith. The following faculty changes are announced: Dr. F. Clements, Illinois, professor of bacteriology and pathology; Dr. E. E. Fisher, Iowa, professor of general surgery; Dr. J. T. Tucker, Ohio, professor of physical diagnosis and diseases of the chest, and Dr. J. L. Parker, Ohio, professor of hygiene and sanitary medicine.

PENNSYLVANIA.

Epidemic Diseases.—Hazelhurst is reported to have an epidemic of the measles.——On account of the prevalence of scarlet fever the public schools of Glen Lyon have been closed.——The health officer has closed the schools of Pennsville on account of the prevalence of diphtheria.——Diphtheria is reported to be epidemic at Berlin.

Filtered Water for Pittsburg.—On October 1 the new plant for supplying Pittsburg with filtered water was put in partial operation, and by Jan. 1, 1908, the entire city north of the Monongahela will have filtered water. This is expected to reduce the number of typhoid cases, which have always been enormous in this section of the city.

Personal.—Dr. George W. Seibert, Lebanon, who was seriously ill, is reported to be convalescent.——Dr. John G. Burke, Pittsburg, has returned from Europe.——Dr. M. J. Skilling, Allan, has been made surgeon of the Clifton Heights Veteran Association.——Dr. Jacob L. Mowery, Lancaster, has been appointed medical inspector of Lancaster County and will have charge of the state tuberculosis dispensary in the city.

Philadelphia.

Leidy Statue Unveiled.—The memorial statue erected in honor of Prof. Joseph Leidy was unveiled October 30 on the west side of the City Hall plaza. Addresses were made by Mr. Joseph Wharton and Dr. Henry C. Chapman.

Reception.—The Medical Club of Philadelphia gave a reception October 18 in honor of Dr. James Tyson, president of the College of Physicians and Surgeons, and Dr. James B. Walker, president of the county medical society.

Advisory Board Elected.—At the annual meeting of the directors of the Frederick Douglass Hospital, the following advisory board was elected: Drs. James Tyson, James J. Gordon, Talcott Williams and Miss Caroline H. Pemberton.

Noted Chinaman Here.—Dr. S. Y. Ho of Pekin, China, surgeon general of the Chinese army, spent the greater part of the week inspecting the hospitals and medical colleges of this city. Dr. Ho was the Chinese representative at the meeting of the Association of Military Surgeons of the United States, recently held in Norfolk, Va. On October 25 he visited the state quarantine station, Marcus Hook.

Hospital Report.—The report of the work done by the Methodist Hospital for September shows that 114 patients were admitted to the house, and 681 were treated in the dispensary. Of these 38 were medical, 448 were surgical cases, 16 gynecologic, 59 eye, 21 ear, 38 nose and throat, 33 skin, 6 orthopedic, 15 pediatric and 7 massage. The total number of visits made to the dispensary numbered 3,091.

Personal.—Dr. and Mrs. S. Weir Mitchell have closed their cottage at Bar Harbor, Maine, and have gone to Hot Springs, Va., before returning to the city.——Dr. Emery Taylor, associate in anatomy at the Wistar Institute of Anatomy, has been elected assistant professor of anatomy at Cornell University.——Dr. Harvey M. Righter, who has been seriously ill at his home with pneumonia, is convalescing.——Dr. Thomas Biddle has returned from Europe.

Health Report.—The total number of deaths reported to the bureau of health for the week ended October 26 was 394. This is a decrease of 49 from the number reported last week, and a decrease of 90 from the number reported in the corresponding week of 1906. The principal causes of death were: Typhoid fever, 7; scarlet fever, 2; diphtheria, 5; consumption, 26; cancer, 20; apoplexy, 15; paralysis, 13; heart disease, 41; acute respiratory diseases, 40; enteritis, 20; cirrhosis of the liver, 7; appendicitis, 4; Bright's disease, 26; congenital debility, 14; suicide, 4; accidents, 14, and marasmus, 8. There were 192 cases of contagious disease reported, with 14 deaths, as compared with 173 cases and 19 deaths reported in the preceding week.

TEXAS.

Communicable Diseases.—Several cases of diphtheria are reported from Marlin.——The public schools of Somerville have been closed on account of diphtheria.——The superintendent of the Northern Texas State Hospital for the Insane, Terrell, reports that there is no truth in the report somewhat widely spread of the presence of beriberi in that institution.——Dengue is reported to be very prevalent in and around La Grange.

Personal.—Dr. and Mrs. Henry C. Haden, Galveston, returned from Europe, October 4.——Dr. Thomas R. Burnet, Jr., Austin, assistant surgeon in the Texas National Guard, has been authorized to attend the Army Medical School, Washington, D. C.——Dr. David Berry, physician of Bexar County, has been appointed a member of the San Antonio Board of Health, vice Dr. Robert E. Moss, resigned.——Dr. J. Garden Springer, Elmendorf, has been elected second assistant physician of the Southwestern Insane Asylum, San Antonio.——Dr. George W. Larendon, city health officer of Houston, has recovered from a serious attack of dengue.——Dr. W. E. Lowry, Laredo, is said to have received slight revolver wounds in a shooting affray, October 8.

Medical Colleges Open.—The Medical Department of the University of Texas, Galveston, opened for its annual session, October 1. Dr. Edward Randall delivered the opening address. Dr. Henry C. Haden, clinical professor of diseases of the eye, nose and throat, has resigned, and has been succeeded by Dr. Seth M. Morris. Dr. James J. Terrill has succeeded Dr. Alfred E. Thayer as professor of pathology. Dr. Henry Hartmann will succeed Dr. James J. Terrill as demonstrator of pathology. Dr. Allen G. Heard has been made assistant demonstrator in medicine.——The annual session of the Southwestern University Medical College, Dallas, opened October 4 with addresses by the president of the university, Dr. John O. McReynolds, dean of the medical department, and others. The following faculty changes are announced: Professor of anatomy, M. P. Stone, B.Sc.; professor of pathology, Dr. Wilmer L. Allison; professor of principles of surgery, Dr. William R. Blailock; professor of ophthalmology and physiology, Dr. John O. McReynolds; professor of histology and bacteriology, Dr. J. H. Black; professor of hygiene, Dr. John W. Embree, and professor of chemistry and toxicology, Landon C. Moore, B.Sc.——The annual opening exercises of Baylor University College of Medicine, Dallas, began October 3, with addresses by the dean, Dr. Edward H. Cary; Dr. George R. Tabor, former state health officers, and others. Among the new members of the faculty are Dr. George R. Tabor, professor of stomach and intestinal diseases; Dr. Frederick A. Baldwin, instructor in physical diagnosis and in charge of the pathologic laboratories; Julian H. Morris, professor of physiology, and Samuel Y. Althoff, B.S., professor of botany and pharmacognosy.——At the annual opening exercises of the Medical Department of Fort Worth University, held October 1, Dr. W. R. Thompson, dean of the college, presided.——The fifth annual session of the College of Physicians and Surgeons, Dallas, began September 30.

GENERAL.

International Sanitary Convention.—The third International Sanitation Convention will be in session in the City of Mexico, December 2 to 7. Reports on the sanitary condition of each Gulf city will be presented.

Little Yellow Fever.—In the report of Dr. John N. Thomas, U. S. P. H. and M.-H. Service, in charge of the inspection of tropical ports, he states that there have been no cases of yellow fever in any part of Central America except Guatemala. Costa Rica, Honduras, Nicaragua and British Honduras have also been free from the disease. The general health conditions of Central America have improved in a marked degree during the last twelve months.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the Alvarenga Prize (being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180) has been awarded for 1907 to Dr. William Louis Chapman of Providence, R. I., for his essay entitled "Postoperative Phlebitis, Thrombosis and Embolism." The next award will be made July 14, 1908. Essays for competition must be typewritten, unpublished, on any subject in medicine, and must be received by the secretary of the college, Dr. Thomas R. Neilson, by May 1, 1908. Each essay must be sent without signature, but marked with a motto and accompanied by a sealed envelope having on its outside the motto and within the name and address of the author.

Personal.—Dr. Robert E. L. Newberne has succeeded Dr. Richard P. Strong as president of the Medical Examining

Board of Manila. Dr. Salvador del Rosario has been chosen secretary-treasurer, and Mrs. Arlington Pond has been made a member of the board.——Dr. W. S. Rochester, bureau of health and house physician at the Civil Hospital, Manila, has been granted leave of absence for one month.——Dr. Juan Gutierrez has been ordered to Cienfuegos to assist Capt. Henry D. Thompson, U. S. Army.——Dr. L. M. Gutierrez and O. Gutierrez of Chihuahua, Mexico, who are making a tour of the hospitals in this country, recently visited Johns Hopkins Hospital, Baltimore.——Dr. C. H. F. Otto, Bartels, Manila, has returned from his vacation, which was spent in Germany.

Sanitation of the Canal Zone.—Col. William C. Gorgas, Assistant Surgeon-General, U. S. Army, chief sanitary officer of the Canal Zone, reports that in August, 76 deaths occurred among the negro employés, equivalent to an annual death rate of 31.26 per 1,000, which compares favorably with the previous month, whose rate was 42.58 per 1,000. The annual rate for July for all employés was 35.43 and for the month of August it was 27.59. The rate for the total population in July was 46.46 and for the month of August 33.75 per 1,000. During August there was a gratifying decrease in pneumonia, the deaths for July numbering 30 and for August 20. During August, 1906, there were 60 deaths from this disease among the employés. Among the 4,200 American white employés in the Canal Zone there were only 3 deaths during the month, equivalent to an annual rate of 8.7 per 1,000.

Military Surgeons Meet.—The sixteenth annual meeting of the Association of Military Surgeons of the United States was held at the Jamestown Exposition, October 15 to 17, with the president, Colonel Valery Havard, assistant surgeon general, U. S. Army, in the chair. The subject of the president's annual address was "The Ideal Medical Department in the Field." The Enno Sander prize was awarded to Major Charles Lynch, surgeon, U. S. Army, and general staff, for his paper on "The Organization of the American National Red Cross Society for the War and What Its Relations Should be to the Medical Departments of the Army and Navy." The following officers were elected: President, Assistant Surgeon George Tully Vaughan, U. S. P. H. and M.-H. Service, retired, Washington; vice-presidents, Surgeon-General Presley M. Rixey, U. S. Navy, Washington; Colonel Joseph K. Weaver, surgeon-general, N. G., Pa., Norristown, and Colonel William M. Gorgas, assistant surgeon-general, U. S. Army, Canal Zone; secretary, Major James Evelyn Pilcher, surgeon, U. S. Army, retired, Carlisle, Pa. (re-elected), and treasurer, Major Herbert A. Arnold, surgeon, N. G., Pa., Ardmore (re-elected). The meeting place for 1908 is to be selected by the executive committee, San Francisco, Atlanta, Chattanooga, El Paso and Washington having given invitations. It is understood that Atlanta will be selected. The meeting closed with a banquet in honor of the foreign delegates from England, India, Italy, Mexico, China and Guatemala, held in the New York State Building.

FOREIGN.

Westenhoeffer of Berlin Called to Santiago, Chili.—The prosector at the Berlin Moabite Hospital, Privat Docent M. Westenhoeffer, has been called to the chair of pathologic anatomy at Santiago, Chili, where he will also have supervision over the various medical institutes and laboratories.

Appropriations in Mexico for Foreign Scientific Institutions.—An annual appropriation of $200 has been voted by the Mexican authorities to the International Marey Institute, whose aims are to render uniform the methods of experimental physiology, and in general to promote this science in every way. A similar appropriation was voted some time ago to the School of Tropical Medicine at Liverpool. These appropriations confer the right for a delegate from Mexico to occupy a place in the laboratory.

International Urologic Association.—The proposed international association of urologists was definitely organized at Paris, October 8. It is modeled after the International Surgical Association, and membership is limited to a small number from each country. The meetings are to be held every three years, and no subjects are to be discussed except the three or four themes on the order of the day. The first congress will be held in October, 1908, at Paris. Guyon, Israel and Harrison were appointed presidents and vice-presidents, with Desnos and Pasteau as secretaries. The first congress will be presided over by Albarran, Posner and Watson.

The Retirement of v. Leyden.—On July 31 a brilliant farewell was given to Prof. Ernst von Leyden of Berlin. The lecture room of La Charité was profusely decorated with symbolic flowers and palms. The audience was composed of representatives of the government in uniform, delegates of the Academy of Medicine, medical societies, von Leyden's staff, prominent men in the scientific world like Frænkel, Kraus, Lazarus, Bier and many other foreign physicians and students. The ceremony began at 10:30 a. m. and ten short speeches were delivered. Then the venerable physician, with a tremulous voice, delivered his oration. At the age of 76 Professor von Leyden retires from the "catedra," but not from the direction of the Cancer Institute nor from his private practice, as he is honorary physician to many of the European courts. His career and activities have been almost phenomenal. He began as an assistant to the celebrated Professor Traube and then became a military surgeon. Dr. Leyden was the initiator and founder of the congresses for the study and relief of tuberculosis and also the initiator of the sanatoria for consumptives. He was the first to discover on the sputum of asthmatics the octahedral crystals technically known as Leyden's crystals. His most recent, and in all probability his last, discovery relates, first, to the treatment of typhoid by serum injections, and, second, to the question of carcinoma. The latter deals, unfortunately, with the etiology and not with the treatment of the disease, and his theory can be formulated as follows: "From the liver of cancerous patients a substance has disappeared that can be found in the liver of normal subjects." Believing that his discovery embraces the probable cause of carcinoma, he will devote the rest of his useful life to investigations in the field of malignant tumors.

Twentieth French Surgical Congress.—This congress was held at Paris, as customary, in the second week of October, and the *Presse Médicale* and *Semaine Médicale* for the corresponding dates give detailed reports of the proceedings. Roentgen treatment of malignant tumors was the first subject discussed. Bécère concluding his address with the statement that the knife should always precede the application of the Roentgen rays except in case of superficial epithelioma and in certain forms of sarcoma, especially the round celled and spindle-celled varieties. He referred also to Skinner's report of a case of sarcoma deep in the abdomen, cured by these rays, and Kienböck's cure of one deep in the mediastinum. Bécère added that the results are still better in lymphadenoma and in the various forms of lymphadenia and in leukemic splenomegaly. He thus witnessed the subsidence to normal size of a spleen which measured 37 by 41 cm., over 16 inches. Mauoury advocated commencing Roentgen treatment at once after removal of the growth, before suturing the wound, unless absolutely certain that everything abnormal has been removed. He makes the exposures through gauze with which the wound is packed or directly on the wound itself. Willems remarked that the terms lymphadenoma, lymphoma, etc., have been vaguely applied to three different affections of the lymphoid tissue: 1, Simple hyperplasia of the ganglia; 2, special hypertrophying tuberculous processes; 3, true neoplasms. The first variety alone yields promptly to Roentgen treatment; the true neoplasm or "lymphoidoma" is not affected by it, while the tuberculous form yields only after several months of treatment, if at all. Temoin stated that Roentgen treatment seemed to postpone recurrence of cancer in his experience, but that when it does appear, it develops with an intensity not observed under other conditions. Pozzi reported excellent results from Keating-Hart's technic of long sparks and high-frequency current in postoperative treatment of cancer, especially for cancer of the face and breast. This "fulguration treatment," as it is called, requires general anesthesia. Dollinger reported the end results in 15 out of 22 cases of trigeminal neuralgia treated by extirpation of the Gasserian ganglion. All the patients were permanently cured of their neuralgia, but the masticating muscles on the affected side are paralyzed and atrophied although no trophic disturbances have been observed. The epidermis is normal. In two patients the eyeball has receded somewhat, and a few complain of occasional buzzing sounds in the ears. Tendon, nerve and muscle transplantations were discussed by the leaders in these operations, assembling from all over Europe. All agreed that there should be from one to two and a half years' delay after the onset of the paralysis before any attempt at these corrective operations. Giordano described an ingenious muscle-nerve autoplastic operation with which he cured incontinence of urine in a child, which resulted from an operation for spina bifida five years before. Broca stated that he had accidentally severed the facial nerve in the course of several mastoid operations, but that conditions had returned spontaneously to normal later. Willems had a number of failures in attempts to transplant tendons, and now merely nails the stretched tendons to the bone, in treatment of paralytic talipes varus or talipes valgus, and has had most excellent results. Another subject

discussed was the connection between chronic surgical affections —tuberculosis and cancer—and industrial accidents. The congress finally adopted a resolution urging the authorities to take into account predispositions and pre-existing affections in legislative determination of indemnities for industrial accidents. Braquehaye described a technic for treating strictures of the rectum by an autoplastic operation, taking a pedunculated flap from the scrotum and drawing it up into the rectum after excision of the stricture. He makes a preliminary artificial anus three months before, to ensure the healing of the rectal process. In women he takes the pedunculated flap from the posterior surface of the vagina, drawing it through a small incision in the rectovaginal wall into the rectum, where it is sutured to sound tissue. Cazin reported research on the pulse during scopolamin-morphin anesthesia, which showed that even half a milligram of scopolamin has an action on the heart liable to be dangerous with a higher dosage. In the majority of cases the pulse grew slower, dropping to 40, 42 or 48, in the course of the operation. On the other hand, graphic record of the pulse showed slight irregularities in rhythm and amplitude. He thinks that it would be wise to reduce the current dosage and not go above 0.0002 to 0.0004 gm. of scopolamin.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Oct. 17, 1907.

Tuberculosis in Ireland.

A tuberculosis exhibition is being held in Dublin. It was organized to direct attention to the remarkable prevalence in Ireland of pulmonary tuberculosis. Out of 74,427 deaths registered in Ireland during 1906, no fewer than 11,756, or 15.8 per cent. were due to tuberculosis. Dr. R. F. Tobin delivered an address at St. Vincent's Hospital, Dublin, a short time ago, in which he stated that according to his estimate there are at this time in Ireland 120,000 persons suffering from consumption in a more or less advanced stage. He asserted that the prevention of tuberculosis is a national matter, and should therefore be regarded from a patriotic standpoint. He suggested that the Gaelic League should use its influence in preventing consumption in the same way that it has assisted in checking intemperance. Dr. Douglas Hyde, the president of the Gaelic League, who spoke in Gaelic, supported this suggestion. It is notorious that pulmonary tuberculosis is originated and spread, first by the individual predisposed to the infection, and second, by favorable environment. In brief, it is a question of the seed and soil; if the soil be not suitable the seed can not be propagated. The Gaelic League, therefore, can undoubtedly effect much by teaching and preaching the laws of hygiene. Its great influence may be beneficially exerted in the improvement of drainage and ventilation and of housing the poor. A crusade against tuberculosis in Ireland on patriotic and rational grounds would be a new departure for a political body to undertake, but it would be one which would greatly redound to its own credit, and would be for the benefit of the race. Professor Osler delivered a lecture on "What the Public Can Do in the Fight against Tuberculosis." He pointed out that two of the greatest victories of human efficiency had been achieved in connection with the fevers. One of the greatest victories ever achieved was the abolition of typhus fever, which until a few decades ago ravaged the country. From 1871 to 1880 there were 7,495 deaths from this disease; in 1905 there were only 68. He bore tribute to the great part played by Irish physicians in fighting this plague. The other victory was that over malaria, which to-day was practically complete. But the great scourge of tuberculosis remained. In the fight against this he recommended two measures: First, there should be compulsory notification and proper measures of disinfection should be carried out. It was most important that the house in which the disease existed should be under the absolute control of the medical attendant, particularly in the hovels of the poor in Ireland. The other measure was the establishment of sanatoria. The exhibition is modeled after similar undertakings in the United States. The exhibits are grouped under four heads. The first consists of maps, diagrams and charts supplied by the Registrar-General of Ireland, illustrating the statistics of the disease. The second section is devoted to pathology, human and veterinary. There is a model of a summer house built by a doctor in the west of Ireland in which he cured himself of consumption. The third section contains appliances—special cups, handkerchiefs, etc. Of interest to sufferers in the country districts is a hollowed-out piece of turf, which can be burned after it is used as a spittoon. Sleeping bungalows and shelters of different patterns are also shown. In a literary section are displayed historical works dealing with the subject of consumption.

Sanatorium for Consumptive Children.

The first British sanatorium for consumptive children was opened recently at Stannington, Northumberland. It is under the care of the Poor Children's Holiday Association and Rescue Agency, Newcastle, which has been in existence since 1891. Under its auspices are conducted a training home for girls, a convalescent home, boys' rescue and labor homes and other agencies. The cost of the sanatorium, mostly provided by local donors, is $70,000.

The Physical Condition of Boys Entering Rugby.

At the recent International Congress on School Hygiene, Dr. Dukes, medical officer of Rugby, one of the great public schools, read a paper on the physical condition of the boys entering that school, based on 1,000 unselected cases. Most of the observations on the physical condition of school children that have been published have dealt with the elementary schools attended by the children of the poorer class. But no systematic observations on the children of the upper classes, who want for nothing that money can supply, such as those who attend Rugby, have been previously published. The boys examined, Dr. Dukes says, "may be regarded as a special class, strong and healthy, well bred, well fed and reared mainly in the country. Even when their infancy and childhood was passed in towns and cities, the period of life from 9 to 13 was usually spent in the country at admirable preparatory schools." These boys go to Rugby between the ages of 13 and 15. On entrance they are subjected to a careful medical examination. Records were carefully kept from Jan. 21, 1899, to May 6, 1907. The results show an extraordinary amount of physical defects in this favored class. A large number of acquired deformities was found among them. Among them are anteroposterior curvature of the spine, 1 case; lateral curvature, 445 cases; pigeon breast, 126; bow-legs, 45; knock-knees, 526; flat feet, 325; hammer toes, 5; undescended testicle, 9. Defective hearing was noted in 34 cases. Defective sight was found as follows: Hypermetropia, 40; myopia, 128; astigmatism, 27; color blindness, 12. Heart disease was found in 10 cases—8 mitral, 1 aortic and 1 irregular action. Respiration was nasal in 888 and oral in 112 cases. Oral respiration was usually due to a very short upper lip, which prevented the mouth from being closed, or to adenoids. In many cases an operation had already been performed for the latter. The teeth were well cared for in 943, neglected in 57. A curiously large number of boys—437—suffered from chilblains. Incontinence of urine existed in 28 cases, of which 2 were diurnal and 26 nocturnal. Functional albuminuria was found in 157 and a trace of sugar in the urine in 3. In no case examined at maturity was the albuminuria found to persist.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Oct. 12, 1907.

Professor Politzer's Retirement.

After attaining the age of 70 years and having had his honorary year at the clinic for otology, Adam Politzer retired from clinical activity September 30. The last lecture delivered by him was a unique manifestation of his eminent teaching qualities. After dealing with the history of otology, he explained briefly the present state of this branch of medicine and exhorted the medical profession to turn its attention to the study of diseases of the ear. He compared diseased conditions of the ear, especially the mastoid and cerebral complications, as equal in harmfulness with tuberculosis. Politzer's former assistants and pupils, including nearly all the famous otologists of Europe, as well as many other physicians and surgeons, were present at the lecture and the retiring scientist was presented with a gold medal bearing a well-executed likeness of himself, while the members of the meeting all received bronze medals. An address was delivered to him and also an album in which all the contributors had signed their names. Politzer's successor is Prof. Victor Urbantschitsch, who has hitherto been director of the otologic department of the Policlinic.

New Institution for Treatment of Mental Diseases.

Vienna now has what is probably the largest charitable institution in the world devoted to the treatment of mental disease. The new institution can easily accommodate 3,000 inmates and has 39 pavilions; the grounds cover over 1,100 acres. The cost of the land and the building was $2,250,000, or less than $800 a bed. A large sanatorium for paying patients is connected with the institution and will accommodate 350 patients and 100 additional patients for the out-door work colony. The medical staff will consist of a director, 2 assistant directors and 12 resident medical officers, in addition to 20 visiting physicians and practitioners.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Scarlet Fever.

Incubation.—From three to five days, with a range of from one to twelve.

Eruption.—In twenty-four hours.

SYMPTOMS.

Onset is sudden, fever is high, vomiting is frequent. The tongue is coated, which coating in a few days comes off leaving a more or less typical strawberry tongue. The throat is dry. The eruption is macular, quickly becoming erythematous, and of a scarlet hue. It appears first on the neck and chest and rapidly spreads over the entire body, and lasts from seven to ten days. The throat is always red and swollen, especially the tonsils, which may have a follicular exudate or an actual formation of membrane. The glands of the neck are more or less swollen, depending on the intensity of the throat symptoms. The fever remains high, gradually becoming lower as the eruption fades. The pulse and respiration follow the temperature. There is not much vomiting unless the throat is seriously inflamed. The bowels are constipated. The spleen is generally enlarged. The urine is scanty and high colored, and may show traces of albumin even if nephritis is not present. There is always more or less leucocytosis. The skin is dry throughout the disease, with more or less itching, and desquamates after the disappearance of the eruption. The more severe the disease, the greater the amount of desquamation and often the more prolonged, the general range of active desquamation being from one and one-half to three weeks.

COMPLICATIONS.

Among the complications of scarlet fever are: Nephritis, abscesses of the cervical glands, middle-ear inflammations, and, rarely, cardiac, lung and joint inflammations.

TREATMENT.

1. Isolation.
2. Management of stage of invasion.
3. Management of stage of eruption.
4. Management of stage of desquamation and convalescence.
5. Care of the skin.

1. *Isolation.*—The location of the room, best at the top of the house, the removal of all unnecessary furniture, draperies, rugs, and fancy articles from the room, the removal of other children from the house if possible, the appointment of one attendant on the patient, again, if possible, and the complete isolation are all too well understood to require more than mention.

It is a good plan to hang at the door through which the attendant must frequently pass a sheet kept wet with some simple antiseptic solution, for example, 5 per cent. phenol solution. Formaldehyd solutions are too irritant in their vapors, and corrosive sublimate solution would best not be thus used. The attending physician when he enters the room should wear either a rubber coat or a linen duster. The care of the understood. The length of time the child should be kept from clothing and the final disinfection of the room are all well school and from contact with other children is a subject for discussion, some writers claiming that children should not return to school for eight weeks from the beginning of the infection.

Strong phenol or other antiseptic ointments are best not used on the skin, as they may be absorbed.

2. *Stage of Invasion.*—The bowels should be thoroughly evacuated, and some antipyretic often must be given to reduce the high temperature. Little nourishment need be given in the first twenty-four or forty-eight hours, but water should be given freely. Antiseptic gargles should be begun.

[The following is an easy method of computing the dose of a drug according to age:]

At 20 years the adult dose.
At 10 years, one-half the age, one-half the dose.
At 5 years, one-fourth the age, one-fourth the dose.
At 2½ years, one-eighth the age, one-eighth the dose.
At 1 year, one-twelfth the dose.
—(Osborne's "Materia Medica and Pharmacology," p. 113.)

The table is applicable to the doses of most drugs except strong narcotics, as opium and its alkaloids.]

For a child 10 years old:

R.	gm. or c.c.		
Hydrargyri chloridi mitis	15	or	gr. iiss
Sodii bicarbonatis	50		gr. x

M. et fac chartulam 1.
Sig.: Give at once with milk.

For a child 3 years old the following may be used:

R.	gm. or c.c.		
Hydrargyri chloridi mitis	05	or	gr. i
Sacchari albi	1		gr. xv

M. et fac chartulam 1.
Sig.: Give at once.

Or, for a child 5 years old:

R.	gm.		
Hydrargyri cum creta	30	or	gr. v

Fac chartulas 2.
Sig.: Give a powder at once, and repeat in ten hours if needed.

For a young child:

R.	c.c.		
Magmæ magnesiæ (N. F.) (Milk of magnesia.)	100	or	fʒiii

Sig.: One or two teaspoonfuls, in milk or water, and repeat during the disease as needed.

The following may be given to a child 5 years old for high fever in the first stage of the disease:

R.	gm.		
Acetanilidi	30	or	gr. v
Sacchari albi	5		ʒi

M. et fac chartulas 10.
Sig.: A powder every three hours for two or three doses, and then only as directed.

For a child 15 years old, the following is useful:

R.	gm.		
Acetanilidi	50		gr. viiss
Camphoræ monobromatæ	25	or	gr. iv
Caffeinæ citratæ	15		gr. iiss

M. et fac capsulas 5.
Sig.: A capsule, with water, every 3 hours for two doses, and then only as directed.

For a child 8 years old:

R.	gm.		
Acetphenetidini	75	or	gr. xii

Fac chartulas 5.
Sig.: A powder every three hours for two doses, then only as directed.

For the throat, the following gargle may be used:

R.	c.c.		
Aquæ hydrogenii dioxidi	200	or	fʒvi

Sig.: Dilute with three parts of warm water and use as a gargle every three hours during the day, and every six hours at night.

After gargling with the above, the throat should be cleansed

of the irritant peroxid with warm weak salt solution or with a bland alkaline solution.

If the child is too young to gargle, the throat should be swabbed or sprayed with the peroxid full strength (or diluted, depending on the age), and this application should be quickly followed with a soothing spray.

Also the following gargle should be used to alternate with the peroxid solution:

R.	gm. or c.c.		
Acidi borici	8	or	ʒii
Aquæ	200		fʒvi

M. Sig.: Use as a gargle every three hours during the day, and every six hours during the night.

These two gargles should alternate, i. e., one or the other should be used every one and one-half hours during the day, until all membrane or follicular exudate has disappeared from the throat, then the peroxid should be used only infrequently for a day or two and then stopped altogether. The boric acid solution should be continued as a gargle three or four times a day. If the throat remains red and irritated, a change may be made to:

R.	gm. or c.c.		
Potassii chloratis	10	or	ʒiiss
Aquæ	200		fʒvi

M. Sig.: Use as a gargle every three or four hours.

Or:

R.	gm. or c.c.		
Liquoris antiseptici	200	or	fʒvi

Sig.: Use as a gargle or spray, clear or diluted, as directed.

Or:

R.	c.c.		
Liquoris antiseptici alkalini (N. F.)	200	or	fʒvi

Sig.: Dilute with four or five times its volume of warm water and use as a gargle.

3. *Stage of Eruption.*—Gargles and sprays are to be continued in this stage. Occasional doses of laxative may be given if needed. A milk and gruel diet is indicated, with plenty of water to drink. If the fever is high, an ice cap may be applied to the head, with tepid water sponging of the body. Ice throat bag or cold pack to the neck and throat may be used if there is a tendency to glandular inflammation. If sponging is deemed inadvisable, an occasional dose of one of the coal-tar products may be given, provided the pulse is of good character. The nostrils should be kept clean by spraying with a warm alkaline solution as represented by the Seiler's tablet or other equally bland solution. The ears should be watched and expert care given them, if such is needed. Bromids often must be given for restlessness and sleeplessness. The urine should be examined daily. Alcohol and strychnin as cardiac stimulants and tonics had best not be given unless the circulation positively requires them, and then they should be administered with care.

For a child 10 years old the following may be prescribed:

R.	gm. or c.c.		
Sodii bromidi	10	or	ʒiiss
Aquæ cinnamomi	100		fʒiii

M. Sig.: A teaspoonful, in water, at 9 p. m.; repeat the dose in three hours if needed, and then only as directed.

4. *Stage of Desquamation.*—The milk and cereal diet should be continued. Coffee, tea, alcohol, and meat should not be allowed, and any drug that irritates the kidneys should not be given. As soon as the patient is strong enough he may sit up and be about the room, but he should remain in one, or at most two rooms, until desquamation is completed. How soon he may go out-of-doors depends on the time of year.

While more or less kidney congestion is a part of this disease, and should not be considered as a complication, at the same time during the period when the skin is unable to perform its eliminative work properly, chilling of the surface of the body will tend to precipitate a nephritis.

5. *Care of the Skin.*—The itching, which is often a very troublesome symptom, can be relieved during the acute stages of the disease by sprays of cologne or menthol and alcohol. Later, when desquamation is taking place, warm sponge baths should be given daily, with applications three times a day of some simple ointment, which will soothe the irritated skin and prevent the flying about of the epidermis, and thus prevent the spread of contagion. Where there is a tendency for the hands to "peel," or desquamate, for a long time, the child should wear cotton gloves. This will allow him to go about the house without spreading contagion.

For the itching the following may be used:

R.	gm. or c.c.		
Mentholis	5	or	gr. lxv
Cologne	100		fʒiii

M. et sig.: Use externally as directed. Or:

R.	gm. or c.c.		
Chlorali hydrati	5		ʒi
Sodii salicylatis			
Glycerini		or	
Alcoholis	āā 10		āā fʒii
Aquæ	q. s. ad 200		ad fʒvi

M. et sig.: Use externally as directed.

Or, a soothing ointment, such as the following, may be used:

R.	gm. or c.c.		
Adipis lanæ hydrosi	50		ʒii
Petrolati liquidi	10	or	fʒi
Olei lavendulæ florum	30		m. v

M. et sig.: Use externally as directed.

Or:

R.	gm. or c.c.		
Eucalyptolis	10	or	fʒiiss
Petrolati albi	ad 100		ad ʒiii

M. et sig.: Use externally as directed.

Or, where there is some itching:

R.	gm. or c.c.		
Mentholis	50		gr. x
Phenylis salicylatis		or	
Olei olivæ	āā 10		āā fʒiii
Adipis lanæ hydrosi	ad 50		ad ʒii

M. et sig.: Use externally as directed.

Or:

R.	gm. or c.c.		
Phenolis liquefacti	1		gr. xv
Mentholis	1	or	gr. xv
Petrolati liquidi	100		fʒiii

M. et sig.: Use externally as directed.

If acute parenchymatous nephritis occurs, the form which follows scarlet fever, its treatment is that of any acute nephritis.

Pharmacology

[Contribution from the Chemical Laboratory of the American Medical Association.]

IODIDE OF LIME (NICHOLS').

W. A. Puckner and A. H. Clark.

Having determined the composition of Calcidin (Abbott), it was deemed of interest to determine the composition of a similar product sold as "iodide of lime (Nichols')" by the Billings Clapp Co., Boston.

Iodide of Lime (Nichols') is said to have been originated about forty years ago by Dr. James R. Nichols of Boston, who was one of the original members of the firm of Billings Clapp Co. A specimen of this preparation was purchased in the open market and analysis in the Association laboratory indicated its composition to be, approximately:

"Available" Iodin (liberated on acidulation)	10.66
Calcium Iodide (CaI_2)	.65
Calcium carbonate ($CaCO_3$)	3.77
Lime (CaO)	49.06
Alumina (Al_2O_3)	1.87
Magnesia (MgO)	13.89
Silica (SiO_2)	1.22
Water (by difference)	18.88
	100.00

Iodide of Lime (Nichols') is, therefore, essentially a mixture of lime and iodin containing about 10 per cent. iodin. The other constituents apparently are impurities in the lime used in its manufacture.

Calcidin (THE JOURNAL A. M. A., Sept. 7, 1907, page 865), was found to contain 14.13 per cent. iodin of which 9.2 per cent. in the presence of the acid of the stomach acted as free iodin, while the remaining portion acted as calcium iodid. The Iodide of lime (Nichols') contains 11.22 per cent. iodin, practically all of which (10.66 per cent.) is "available," i. e., liberated as free iodin by the acid of the stomach.

IODIDE OF LIME TABLETS (NICHOLS').

Examination of the tablets of "Iodide of Lime," sold by Billings Clapp Co., demonstrated that, like "Calcidin Tablets," they differ in composition from the original substance with which they are supposed to represent. Iodide of Lime (Nichols') was found to contain approximately 10 per cent. "available" iodin. Each 1/3 grain tablet should, therefore, contain about 1/30 "available" iodin. Instead, it was found that each tablet was equivalent to 1/128 grain of free iodin.

It is worthy of note in this connection that the tablets appeared decidedly brown in color, which might be taken to indicate that they really did contain a considerable amount of free iodin. The examination, however, showed that brown color to be due to the presence of large amounts of iron oxid.

ANALYSIS OF IODIDE OF LIME (Nichols'). The determinations and calculations were made in the same manner as for Calcidin (THE JOURNAL A. M. A., Sept. 7, 1907, page 865). In the case of available iodin, there being no cornstarch present, the specimen was simply mixed with water, an excess of hydrochloric acid added, and the liberated iodin titrated. Silica (SiO_2) is the residue insoluble in hydrochloric acid. Aluminum was determined in the usual manner.

This analysis shows that the specimen contained:

Total iodin	11.22
Calcium (Ca)	36.64
Aluminum (Al)	.99
Magnesium (Mg)	8.28
Carbon dioxid (CO_2)	1.66
Silica (SiO_2)	1.22

The Limit in Advertising.

A short time ago we remarked on the ingenuity of the purveyors of purgen shown in the ingenious package in which samples of the medicine are sent out to physicians. We are indebted to the *California State Journal of Medicine* for further evidence of this ingenuity as shown by the method of advertising in Europe. A correspondent of the California journal has sent a specimen of toilet paper used in the foremost hotel of Prague with an advertisement printed on it of which the following is a translation. "Purgen—The most eminent professors prescribe it daily. The mildest, best tasting laxative; may in fact be given to sucklings." This illustrates the rapidity with which the benefits of proprietary medicines advertised as strictly ethical are made known to a needy public. How long will it be before our American hotels and homes are supplied with this interesting and appropriate means of spreading information? Our contemporary pertinently expresses its wonder "whether Lehn & Fink have been supplied with a large quantity of this same toilet paper, with the truly appropriate inscription translated into English, for subsequent use in this country."

Cumulative Action of Digalen.

A. Fraenkel[1] has recently investigated, experimentally, the question of the cumulative action of digalen. Cloetta, the originator of this preparation, had maintained that it does not have a cumulative effect. Fraenkel states that Cloetta simply used too small doses and maintains that the proof that a member of the digitalis series does not have a cumulative action can be accepted only when it is shown that a dose which, when administered once has a distinct effect, can be given daily for some time without causing symptoms of poisoning. Judged in this manner, digalen was found to have a cumulative effect as do all other members of this series. Fraenkel's animal experiments are in accord with the experience of a number of clinicians. Thus Veiel of Nuremberg states that the prolonged use of digalen leads to the same gastric disturbances as do the older digitalis preparations. Romberg also states that alarming "digitalismus" may result from the free use of digalen, and Eichhorst reports that with some of his cases discomfort and vomiting followed the use of digalen and expresses his opinion that, as far as disagreeable effects are concerned, this preparation is scarcely superior to powdered digitalis. Fraenkel also shows that a digitalis effect can be obtained as quickly by powdered digitalis, given by the mouth, as by digalen given hypodermically. Fraenkel believes that powdered digitalis which has been physiologically standardized, is the best form in which to administer the drug.

1. Arch. f. exper. Path. u. Pharm., 1907, lvii, pp. 123 and 131.

Correspondence

Probilin—A Criticism and a Reply.

NEW YORK CITY, Oct. 5, 1907.

To the Editor:—Our delay in replying to the "Report on Probilin by the Council on Pharmacy and Chemistry—with Comments," published in your issue of Aug. 24, 1907, was occasioned by the fact that we awaited the advices of the general agents for Probilin, Messrs. Goedecke & Co., in Leipsic, who in turn communicated with the manufacturer, F. Buchka, in Frankfort o/M. It is regrettable that you reached and published these findings without having informed us of them; without having given us an opportunity to submit evidence in rebuttal and to show wherein both "Report" and "Comments" are wholly incorrect. This method of procedure, which has committed you to a wrong position, was arbitrary and injudicial.

It is manifestly absurd to suppose that a firm would give a formula knowing that it calls for a weight greater than that which the product actually possesses, knowing that the simple weighing of the product discloses the incorrectness of the formula. No fair-minded physician can believe that we would do so. That there has not been the least intent on our part to misstate the composition of Probilin is, moreover, proved—if proof is necessary from a firm of the standing which we believe ours has attained in the forty years of its existence—by the following extracts from correspondence we had with Mr. Puckner. On March 5, 1907, he wrote:

A subcommittee to whom Probilin was assigned has reported to the Council. The report states that, according to the statements made by you, the composition of these pills is that published by Dr. Reynold W. Wilcox in THE JOURNAL of the American Medical Association, Aug. 4, 1906, p. 347. But while, according to this formula, each pill should contain: Acid sodium oleate, 1½ grains; salicylic acid, 1½ grains; phenolphthalein, 1 grain; and menthol, ¼ grain; examination has demonstrated that this formula does not correctly represent the composition of the product as found on the market.

We replied, March 7, 1907:

We have your favor of the fifth inst., contents of which are noted. In response we would say that the formula which we state for Probilin is that given by Dr. Bauermeister in his first report on the remedy, but of course the pills contain some substance to give them consistency. We would like to hear from you in what respects our formula does not, in the opinion of your subcommittee, represent the composition of the pill.

In his answer, March 14, 1907, Mr. Puckner said:

Dr. Bauermeister's formula, as the subcommittee understands it, states the same amounts of sodium acid oleate and salicylic acid, but does not state the amounts of menthol and phenolphthalein.

We wrote, March 16, 1907:

On referring to the original report of Dr. Bauermeister, we find that you are right and that he does not give the quantities of phenolphthalein and menthol contained in Probilin. However, it is of very little consequence if these two ingredients are quantitatively precisely the same as in the pill recommended by Professor Wilcox, as they are entirely harmless, so that a slight difference, i. e., if there should be a little more or a little less of the one or the other is wholly immaterial. We have written the manufacturers to let us know the exact amounts of these two ingredients.

On April 6, 1907, we supplemented this by the following:

Regarding Probilin we beg to state that the manufacturers inform us that it has been found sufficient to add 15/100 of a grain of phenolphthalein and 45/100 of a grain of menthol to each pill, as these ingredients are added only to regulate intestinal activity and to promote tolerance of the remedy.

It is strange that the Council's report states that we claim Probilin to contain 1 grain phenolphthalein and ¼ grain menthol, suppressing the fact that we had informed it that the amounts are 15/100 and 45/100 of a grain respectively.

It will be seen that to our request to let us know in what

respects the formula does not in the opinion of the subcommittee represent the composition of the pill. Mr. Puckner answered: "Dr. Bauermeister's formula states the same amounts of acid sodium oleate and salicylic acid, but does not state the amounts of menthol and phenolphthalein." Mr. Puckner thus wrote in a way which obviously gives the impression that, while the amounts of acid sodium oleate and salicylic acid are as given by Dr. Bauermeister, the amounts of phenolphthalein and menthol were not stated by Dr. Bauermeister, and that he desired to call attention to this fact. This had our immediate attention, and Mr. Puckner was informed of the correct amounts as soon as we learned them. Now if he had not intimated in his letter that the difference found confined itself to phenolphthalein and menthol, the inquiry which we placed to Messrs. Goedecke & Co. would not have been solely with regard to these two substances, and the matter would have been entirely cleared up at that time. Mr. Puckner must have known that there was not the least disposition on our part to keep the composition of Probilin secret and that the discrepancy as to the weight must be due to some misunderstanding.

The unsigned analysis contained in the "Report" is incorrect, approximating only with regard to the phenolphthalein. There was no need to publish these erroneous findings as the composition of Probilin.

Messrs. Goedecke & Co. write us that they learn from the manufacturer of Probilin, F. Buchka, in Frankfort o/M., that experimentation with Bauermeister's formula led to improvements therein, the perfected pill, adopted when Probilin was first introduced commercially, being represented by the following formula:

Acid. salicyl	0.020 gm.
Natr. oleic.	0.080 gm.
Natr. stear.	0.040 gm.
Phenolphthal	0.010 gm.
Menthol	0.030 gm.
Excip.	

Therapeutic as well as pharmaceutic considerations lead to the change made in the formula originally proposed by Dr. Bauermeister, the addition of sodium stearate being for the purpose of raising the melting point, so that a small quantity of excipient suffices. The salicylic acid reacts with the sodium oleate, forming sodium salicylate with the liberation of a slight amount of oleic acid; but in this organism the sodium salicylate is at once split up into salicylic acid and is found as such in the bile (Huchard).

The correctness of this formula is shown by the following analysis of Probilin made at our request by Virgil Coblenz, Ph.D., professor of chemistry in the Department of Pharmacy of Columbia University, New York; member of the committee of revision of the U. S. Pharmacopeia:

The following are the results of a quantitative examination of original sealed packages of Probilin pills submitted:

An average pills contains:

Salicylic acid, 0.0196 gm., calculated as sodium salicylate	0.0225 gm.
Free oleic acid	0.0290 gm.
Sodium oleate and stearate	0.0910 gm.
Phenolphthalein	0.0108 gm.
Menthol	0.0296 gm.
Dusting powder (organic matter)	0.0350 gm.

A slight percentage of moisture is present, the determination of which can not be made with any degree of accuracy.

[Signed] VIRGIL COBLENTZ.

The charge of garbling in our literature is inexplicable. It was made in correspondence with us, and was based on the fact that the version of Professor Wilcox's paper published in our pamphlet differed in two respects from that in THE JOURNAL of the American Medical Association. We informed you, however, that we used the stenographic transcript of the paper which Professor Wilcox read before the American Therapeutic Society, so that we accurately reproduced his communication, and gave credit to the Transactions of the American Therapeutic Society. We also credited, secondarily, THE JOURNAL of the American Medical Association because we adopted the classified arrangement which you had devised. Our literature is compiled with the utmost care, and when lack of space compels us to abstract reports, instead of reprinting or translating them verbatim, every possible precaution is taken to prevent any change in the sense.

Equally gratuitous and untrue are the statements that Probilin is made especially for the American market, is not used and recognized in the land of its origin, and is not mentioned in any German text-book or any German price list. The preparation is extensively advertised in German medical journals, as in the *Deutsche medicinische Wochenschrift*, the *Münchener medicinische Wochenschrift*, the *Therapeutische Monatshefte*, the *Aerztliche Zentralanzeiger*, the *Aerztliche Vereinsblatt*, the *Aerztliche Correspondenzblatt für Niedersachsen*, the *Aerztliche Mitheilungen*, etc., etc. As the advertisements state, Probilin is obtainable in all drug stores in Germany. It is quoted in the price lists of the German drug firms, and we will send you by registered mail about ten of such lists. That Probilin is not mentioned in the German text-books, is not strange, since it is only four years old. To our knowledge, however, it is mentioned in at least one—the Encyclopädische Jahrbücher der gesamten Medizin of Professor Eulenburg, Vol. XIV, 1907.

We are sorry that all these assertions were printed before proper investigation—all the more because of our sympathy with the Council's work as outlined at its inception and our consequent aversion from taking issue with any part of that work. Permit us to assure you that there is no need of secret procedure in an inquiry into our products; we shall always be glad to extend to you our utmost cooperation in any fair investigation of them which you may desire to make.

Yours respectfully,

SCHERING & GLATZ.

REPLY.

The above letter, when divested of obscuring verbiage and discussion of non-essential points, simply verifies the statements made in the Council's report on Probilin. The essential fact in the letter is the admission on the part of Schering & Glatz that, while advertising to physicians that each Probilin pill contained certain definite quantities of certain ingredients, they were, according to their own admissions, ignorant of the composition of the pill.

Most ingenuous is their statement that the only ingredients in the pill, regarding which they made inquiry of Messrs. Goedecke & Co., were those concerning which the Council wrote them. One would naturally suppose that the firm of Schering & Glatz would be interested in knowing the true proportions of all the ingredients of the product, especially when positive statements regarding the composition and therapeutic properties of Probilin and of all its ingredients were being made on the authority of Schering & Glatz and not of Goedecke & Co.

As to the claim that lack of consideration was shown the firm, the following facts are a sufficient refutation: Probilin pills were not submitted to the Council by the agents or manufacturers. They were taken up for investigation by the Council on Pharmacy and Chemistry on its own initiative. Under these circumstances, the Council was under no obligations whatever to consult the agents or manufacturers before making statements regarding its findings. It did, however, do them the gratuitous courtesy of calling attention to the discrepancies between the facts and the statements made by Schering & Glatz in their literature. As a perusal of the quoted correspondence will show, Schering & Glatz at no time denied that such discrepancies existed, while the difference between the "improved" formula which they now give and the formula published in their literature is sufficient proof of the truth of the Council's statements. The opportunity afforded Schering & Glatz to correct these misstatements before the publication of the report on Probilin was not utilized. *The Council waited for six months for Schering & Glatz to correct their literature.* At the end of that time, finding that incorrect literature was still being sent to physicians, the Council published its report. The claim, therefore, that the Council acted in a way that was "arbitrary" and "unjudicial" can not be sustained.

Schering & Glatz evidently labor under the impression that the important question is the statements which they made to the Council, whereas the point under discussion is the statements which they made to the medical profession. What would it profit if errors in literature were confessed to the Council so long as the incorrect advertising matter was still sent to physicians? Schering & Glatz's own statements show that they continued to send out incorrect literature after their attention had been called to the inaccuracies contained therein.

As to the charge of garbled literature, it is only necessary to compare the article by Reginald Webb Wilcox, as printed in THE JOURNAL of the American Medical Association for Aug. 4, 1906, with the proprietary reprint of the same article sent out by Schering & Glatz. The reprint contains the following sentence, the words in italics being interpolated and not found in the article in THE JOURNAL: "This combination, *best prescribed as Probilin pills on account of the scarcity of pure acid sodium oleate and difficulty of manufacture*, given as 4 to 8 pills in a full glass of water," etc. These words occur in the reprint without anything whatever to indicate that they were not in THE JOURNAL, and yet the reprint as a whole is credited to THE JOURNAL.

The analysis[1] made by Professor Coblenz, for Schering & Glatz, agrees essentially with that made for the Council and further emphasizes the incorrectness of the formula given in the literature issued by Schering & Glatz. If the formula was "improved," why was not the literature also improved at the same time? How long would it have been before Schering & Glatz learned that the formula which they were publishing was not correct if the Council had not called attention to it?

So much for this particular case. In the light of this discussion, the following general statements seem appropriate:

The Council on Pharmacy and Chemistry was organized in the interests of American physicians. One of its objects is to see that proprietary manufacturers and distributors tell the truth regarding the composition of their products. That an established firm of good reputation has been misled or imposed on by its employés, or that it is in ignorance of the composition of its own products, is no justification, neither is it an essential point in the argument. The higher the reputation of a firm, the stronger is the implied assurance that only the most conservative, scientifically correct statements will be made on the authority of the firm, regarding its products. It is to be regretted that firms of high standing would wantonly jeopardize their reputation by allowing loose statements to be issued in their names. If these things are done, whether intentionally or not, those responsible must take the consequences. It is not too much to ask that manufacturers and dealers confine themselves to simple statements of proven fact regarding their products, and that they do not use an enviable and, perhaps, deserved reputation to mislead physicians. Such demands are not unreasonable. They must eventually prevail, and compliance with them can only be to the advantage of both the physician and the manufacturer.

The New Philippine Medical School Established by the Government of the Philippine Islands.

MANILA, P. I., Sept. 17, 1907.

To the Editor:—The second annual meeting of the Philippine Islands Medical Association was held in Manila during the early months of 1905, and in the course of the discussions the fact was brought out that the Philippine archipelago has an average of only one physician to every 21,209 of the population, or one to every 430 square miles of territory. The association, consequently, deemed it its duty to bring this matter forcibly to the attention of the government and to request that some action be taken looking toward the establishment of a permanent and modern medical school in the Philippine Islands. The conditions for the success of such a school were very auspicious, as the Bureau of Science and the Bureau of Health would be able to furnish a number of trained men to take part in the teaching.

As a result of this agitation, and also as an expression of an ideal which for some time has been in the minds of the Secretary of the Interior and of the various directors and members of the large scientific institutions in the Philippines, the United States Philippine Commission on Dec. 1, 1905, passed an act establishing a medical school in the Philippine Islands, placing it in charge of a board of control, which consists of the Secretary of Public Instruction, the Secretary of the Interior, one other member of the Philippine Commission and a member to be designated by the governor-general. The dean of the faculty of the school, after its establishment, also became a member of the board of control. The school is to form a department of the future Philippine University.

The actual work of organization was not undertaken until more than a year after this, one reason for the delay being that other scientific undertakings were in the course of active growth, and the other because much time was necessary to perfect the actual working plans. A faculty was finally appointed, however, including the chairs of chemistry, clinical medicine, tropical medicine, surgery, hygiene, pathology and bacteriology, pediatrics and obstetrics, with associate professors in several of the branches and with assistant professors in charge of anatomy, pharmacology and physiology. The full professorships of the latter three chairs were left open because it was realized that the three assistants would need to be called from the United States, and it was desired to leave the higher positions open so as to give more opportunity for advancement to the right men. About one-third of the faculty consists of natives of the islands, the other two-thirds being either government employés or American physicians or surgeons engaged in hospital practice in Manila.

The most serious subjects to consider in planning the work for the first year were the nature of the entrance examinations to be required, the number of years of study and the feasibility of admitting students to advanced classes who were either graduates of the present medical school of the University of Santo Tomas or who had taken one or more years of medical study therein. These questions present different phases than they do in the United States, as in America there already are a sufficient number of medical schools of good standing, and no communities are actually suffering from lack of medical attendance; whereas in these islands we must endeavor to furnish reasonably well-educated physicians as soon as possible. The duty of the faculty, therefore, is not only to elevate the grade of medical instruction in the Philippine Islands, but also as rapidly as may be feasible to fit with at least a fair knowledge of medicine young men who should be able to take their places in the provinces where no medical attendance whatsoever is now possible. A rigid standard of entrance examinations could be lived up to, provided these were so to be gauged as to provide not only for admission from the government schools conducted under American auspices and giving a grade of instruction parallel to that in the United States, but also from a number of academies and colleges under ecclesiastical control. The entrance examinations for the first year were therefore conducted so as to secure for us a very good class of students, some of them perhaps not the equal of our own high school graduates in certain branches of study, but all of them with sufficient training of one kind or another to enable them successfully to carry on their medical studies. It seemed impossible to secure students on examination for the advanced years, as our courses of study would be so different from the ones which had been conducted in the ecclesiastical medical school existing in the Philippine

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1. The composition of Probilin pills, as given in the literature heretofore furnished to physicians of this country by Schering & Glatz, is:

Acid sodium oleate	1½ gr.	(about 0.0970 gm.)
Acid salicylic	1½ gr.	(about 0.0970 gm.)
Phenolphthalein	1 gr.	(about 0.0650 gm.)
Menthol	¼ gr.	(about 0.0160 gm.)

According to the above letter Schering & Glatz now admit that the composition is as follows.

Acid. salicyl.	(about 1/3 gr.)	0.020 gm.
Natr. oleic.	(about 1¼ gr.)	0.080 gm.
Natr. stear.	(about 2/3 gr.)	0.040 gm.
Phenolphthal.	(about 1/6 gr.)	0.010 gm.
Menthol	(about ½ gr.)	0.030 gm.

It requires but a glance to see the radical difference between what was claimed and what is now acknowledged as the composition. Leaving out of consideration the composition as found by our chemists' analyses and accepting their own statement, we find that instead of there being 1½ grains of salicylic acid in each pill, there is only about one-third of a grain, and instead of there being one grain of phenolphthalein, there is, in reality, only about one-sixth of a grain.

Their letter acknowledges, further, that instead of using acid sodium oleate the manufacturers used sodium oleate. (Natr. oleic) and sodium stearate (Natr. stear.), which mixture is essentially equal to the composition of castile soap; thus, according to their own formula now given, the ingredient, acid sodium oleate, which it was claimed would make it difficult to make the pill, and the presence of which, according to their interpolated literature, was one of the principal reasons why Probilin should be prescribed, is evidently not present at all.

Islands, that it would be hopeless to expect candidates to pass the same questions as would be submitted to our own scholars; consequently, the faculty decided it to be advisable to admit to the advanced classes only special students not candidates for a degree, and to permit the latter gradually to become regular on passing the examinations at the end of each college year.

The government approved of the above plans, and to enable the school to establish the first four years of its five years' course, it appropriated the sum of $64,000 United States currency to meet the ordinary expenses of equipment and salaries. A temporary building was assigned to the faculty, and was fitted up to serve fairly well for two years, the laboratories being those of chemistry, anatomy, bacteriology and pathology, clinical microscopy, histology, physiology and pharmacology. In addition to this appropriation, there also were provided fifty additional free beds in St. Paul's Hospital, so that the number at the disposal of the school for clinical purposes in the first year will be one hundred. Rooms were also prepared for an out-door free dispensary in the same hospital building. The members of the civil government who were to teach in the Philippine Medical School accepted their positions without additional remuneration, so that the expenses for salaries were only to pay members of the faculty not otherwise engaged in government work.

As soon as the funds were available, the necessary microscopes and apparatus for a thoroughly modern equipment were ordered from abroad and the entrance examinations were held on June 10. The school began its first year with fifty-four matriculates, and it must be confessed that the standard of work among the students in the first three months has been very high. The school was able to secure the services of Dr. Robert Bennett Bean in anatomy and of Dr. Philip K. Gillman in pathology, but as yet has not called any incumbent to the chairs of physiology and pharmacology.

As soon as the temporary quarters were occupied and instruction was being carried on systematically, the faculty began to plan for its new medical building and for a general hospital, the staff of which should be the members of the faculty of the school. The government, realizing the necessity of these improvements, has appropriated $125,000 for the medical school building and $390,000 for a general hospital of 350 beds. These permanent structures insure the future of the medical school, and will in all probability be occupied within the next eighteen months.

The establishment of this medical school is one of the greatest steps recently made in the advance of the American Government. The great benefits to be derived from the obstetrical ward and out-door clinic alone would warrant the outlay, as we strongly hope soon thereby to exert a marked influence on the alarmingly high infant mortality in the Philippines. The graduates of the school in a few years will also begin to make their presence felt. The American physician has never been able to reach the common people in the same way as the native, and the missionary work of a number of well-educated native physicians in hygiene and public health can not be overestimated.

The training and character of the members of the faculty renders it certain that their time will not only be devoted to teaching, but also to the advancement of research in tropical medicine.

PAUL C. FREER.
Dean of the Philippine Medical School.

Queries and Minor Notes

OPSONINS IN PULMONARY TUBERCULOSIS.

——, TEX., Oct. 14, 1907.

To the Editor:—Will you kindly state whether or not Wright and his followers, using Wright's method, have obtained favorable results in pulmonary tuberculosis. If so, have the results been more favorable than those obtained by using tuberculin as described by Trudeau in the June number of the *American Journal of Medical Sciences*? Y. Z.

ANSWER.—So far as reports in current literature indicate, the results obtained in the treatment of pulmonary tuberculosis according to the laboratory or Wright's method, in which case the dose of tuberculin remains practically minimal throughout, are not particularly encouraging. Only in very early stages in which there is no fever has apparent benefit been secured. In more advanced cases, the treatment appears to be without any effect on the course of the disease, and, indeed, its use in such cases has been practically abandoned by Wright and his followers. At present, the clinical method of using tuberculin therapeutically, which has developed gradually during the past fifteen years or so, and in which the effect of the tuberculin is controlled solely by the clinical course and manifestations as outlined in the article by Trudeau, in the *American Journal of Medical Sciences*, June, 1907, has much to recommend it. The results obtained by Trudeau and others are encouraging. In this case it is the effort to produce immunity to tuberculin without recognizable clinical reactions, and we know that tuberculous patients by careful gradual increase in the dose of whatever tuberculin is used may be rendered insusceptible to 10,000 times the amount of tuberculin that at first would cause signal disturbances. The manifest general improvement frequently recorded in cases so treated shows that gradual increase in the dose need not be harmful whatever the state of the opsonic index in the meantime may have been.

ETIOLOGIC FACTORS IN ACIDOSIS.

WHITING, IND., Oct. 16, 1907.

To the Editor:—What are the etiologic factors concerned in acidosis? Is this condition ever present to any extent in typhoid fever? E. L. DEWEY.

ANSWER.—Acidosis may arise from an increased production of acid or from the deficient elimination of acid normally formed. The most important sources of overproduction of acid are excessive fermentation of carbohydrate food in the intestinal canal, imperfect metabolism of the fats in the organism and, possibly, a similar deficiency in the metabolism of proteids. Infection is recognized as a cause of acidosis and it is reasonable to suppose that in some cases the acid is the result of the metabolism of the micro-organism itself.

Acetone is found in the urine in most cases of fever; in some cases it is due to inanition, in others to the destruction of fats. It is probable that acetone is the last member of a series of metabolic products of which the first known is β-oxybutyric acid, the second diacetic acid and the third acetone. It has been suggested that β-oxybutyric acid has its origin in aminobutyric acid, which suggests its possible derivation from the proteids.

Typhoid fever, in common with most infections, shows evidences of acidosis in the appearance of acetone and ammonia in the urine. In more severe cases diacetic acid or even oxybutyric acid may appear in the urine. The amount of these substances produced in fevers is not so great as in diabetes or even in complete inanition. There is no close parallelism between the amount of acidosis and the height of the temperature.

ANTISEPTIC COCAIN SOLUTION.

TEMPLE, OKLA., Oct. 6, 1907.

To the Editor:—Will you please give me the formula of a permanent antiseptic cocain solution that will take the place of proprietary solutions now on the market? M. T. CLARK, M.D.

ANSWER.—Borate of cocain may be used instead of the hydrochlorid, as its solutions keep better. The British Pharmacopeia has a formula for a solution of cocain for hypodermic injection, which is made as follows: Cocain hydrochlorid, 33 grains; salicylic acid, ½ grain; distilled water, 6 fluidrams, or a sufficient quantity. Boil the distilled water; add the salicylic acid; dissolve the cocain hydrochlorid in the solution when cool; add, if necessary, sufficient recently boiled and cooled distilled water to produce six fluidrams. Instead of salicylic acid, boric acid may be used as the antiseptic by mixing the following:

Acid borici.	
Cocainæ hydrochloridi.....	āā 1 or āā gr. x
Aquæ destillatæ	50 ℥j

The water should be boiled before making the solution.

FORMALDEHYD DISINFECTION.

SOMERSET, PA., Oct. 12, 1907.

To the Editor: Please inform me whether or not, when a room is thoroughly disinfected by formaldehyd the gas would kill flies, bedbugs, or lice in the room? If the gas is not destructive to these insects would it be possible for diphtheria bacilli to become attached to the insects and to escape the destructive qualities of the gas? H.

ANSWER.—While it is true that formaldehyd disinfection has failed to kill flies and other vermin, such failures must be ascribed to the fact that these insects possess the power of escaping from a room that is being disinfected, thus remaining alive. That is particularly true of bedbugs. On the other hand, no disinfectant can be guaranteed to kill vermin; not even sulphur used in large

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quantities, unless every avenue of escape from the room is closed. Formaldehyd, however, will invariably kill bacteria because they can not escape as can vermin, and it does not seem possible to assume that they can attach themselves to vermin and be carried from the room, except on the inside of the vermin. It therefore becomes evident that the room should be airtight and that one can not depend on the gas penetrating all crevices into which vermin may find their way, and from which they can return after the room has been aired.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ended Oct. 26, 1907:

Heizmann, C. L., asst.-surgeon general, ordered to his home to await retirement from active service.

Rich, E. W., asst.-surgeon, granted leave of absence to December 1.

Connor, C. H., asst.-surgeon, ordered to accompany troops from San Francisco, Cal., to Fort Leavenworth, Kans.

Macy, F. S., asst.-surgeon, left Fort Williams, Me., for Philippine service.

Smart, W. M., asst.-surgeon, ordered to return from Jackson Barracks, La., to his proper station.

Torney, G. H., deputy surgeon general, assigned to duty as chief surgeon, Department of California, and as medical superintendent, Army Transport Service, in addition to present duties.

Chamberlain, W. P., asst.-surgeon, returned to duty at Jackson Barracks, La., from leave of absence.

Porter, R. S., asst.-surgeon, arrived at Fort Huachuca, Ariz., for duty.

Lewis, W. F., asst.-surgeon, relieved from duty at the Army General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Sill, Okla., for duty.

Furnell, J. M., contract surgeon, relieved from duty in the Department of California, and ordered home, Paris, Ky., for annulment of contract.

Hammond, W. C., dental surgeon, left Fort Apache, Ariz., for duty at Fort Wingate, N. M.

Cullen, C. W., contract surgeon, granted leave of absence for one month.

Roberts, E. E., contract surgeon, ordered from Fort Sill, Okla., to Fort Logan H. Roots, Ark., for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ended Oct. 26, 1907:

Higgins, M. E., and Spear, D. A., appointed asst.-surgeons from Oct. 4, 1907, and ordered to the Naval Medical School, Washington, D. C.

Hathaway, G. S., asst.-surgeon, detached from duty with marines in Cuba and ordered to continue treatment at the Naval Medical School Hospital, Washington, D. C.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 25, 1907:

SMALLPOX—UNITED STATES.

California: Oakland, Sept. 1-30, 3 cases; San Francisco, Sept. 22-Oct. 5, 8 cases, 1 death.
Indiana: Indianapolis, Oct. 7-13, 1 case.
Kentucky: Louisville, Oct. 4-10, 2 cases.
Illinois: Chicago, Oct. 13-19, 2 cases.
Louisiana: New Orleans, Oct. 6-12, 2 cases.
Michigan: Saginaw, Oct. 6-12, 1 case.
Missouri: St. Joseph, Oct. 6-12, 4 cases.
Oregon: Two counties, Aug. 1-31, 3 cases.
New Jersey: Newark, Oct. 6-12, 3 cases.
Washington: Tacoma, Sept. 29-Oct. 5, 1 case.

SMALLPOX—FOREIGN.

Brazil: Para, Sept. 22-28, 13 cases, 9 deaths.; Pernambuco, Aug. 6-15, 108 deaths; Rio de Janeiro, Aug. 26-Sept. 1, 9 cases, 3 deaths.
Canada: Halifax, Oct. 6-12, 1 case.
China: Shanghai, Aug. 26-Sept. 8, 27 deaths.
Egypt: Cairo, Sept. 3-9, 1 case, 2 deaths.
France: Marseilles, Sept. 1-30, 29 deaths; Paris, Sept. 22-28, 1 case, 1 death.
Germany: Barmen, Sept. 22-28, 1 case.
India: Calcutta, Sept. 1-7, 2 deaths; Rangoon, Sept. 7-14, 1 death.
Java: Batavia, Sept. 1-7, 7 cases.
Mexico: Aguas Calientes, Sept. 29-Oct. 5, 4 deaths.
Portugal: Lisbon, Sept. 22-28, 3 cases.
Russia: Moscow, Sept. 15-21, 1 case; Odessa, Sept. 22-28, 1 case; Riga, June 1-30, 52 cases, 3 deaths; St. Petersburg, Sept. 1-14, 4 cases; Warsaw, Aug. 18-24, 6 deaths.
Spain: Barcelona, Sept. 24-30, 2 deaths; Denia, Sept. 29-Oct. 5, 2 cases; Valencia, Sept. 23-Oct. 6, 44 cases, 4 deaths; Vigo, Sept. 22-28, 1 death.

CHOLERA.

China: Hankow, Aug. 24-31, 6 cases, 4 deaths; Shanghai, Aug. 26-Sept. 8, 10 cases, 194 deaths.
Formosa, Sept. 7-14, 1 case, 1 death.
Japan: In southern kens, Sept. 23, epidemic; Kobe, Sept. 7-14, 67 cases, 26 deaths; Osaka, present; Yokohama, Sept. 17-23, 4 cases.
India: Bombay, Sept. 18-24, 17 deaths; Calcutta, Sept. 1-7, 13 deaths; Cochin, Aug. 2-9, 3 deaths; Rangoon, Sept. 1-7, 2 deaths.
Korea: In Northern part, Sept. 11, present; Nakanoshima Island, Sept. 5-11, 11 cases, 2 deaths.
Manchuria: Dalny, Sept. 15-21, 2 cases, 1 death; Port Arthur, Sept. 15-21, 4 cases, 4 deaths.
Philippine Islands: Manila, Aug. 31-Sept. 7, 3 cases, 3 deaths; Province of Lyte, Cariguara, to Aug. 31, 2 cases daily.
Russia: St. Petersburg, Sept. 1-7, 16 cases, 11 deaths.
Straits Settlements: Singapore, Sept. 1-14, 18 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Fernandina, Oct. 19, 1 case (from S. S. *Alf*, from Santiago).

YELLOW FEVER—FOREIGN.

Brazil: Manaos, Sept. 15-21, 3 deaths; Para, Sept. 22-28, 4 cases, 4 deaths.
Cuba: Alacranes, Oct. 18, 1 case; Cienfuegos, 1 case; Habana, Oct. 16, 2 cases, 1 death (one case from Cienfuegos); Jovellanos, Sept. 24, 1 case.
Trinidad: Matanzas Province, near Unio de Reyes, 2 cases; Santa Clara, Oct. 16, 1 case.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 13-19, 5 cases, 5 deaths.
Washington: Seattle, Oct. 16-19, 1 case, 1 death.

PLAGUE—FOREIGN.

Brazil: Pernambuco, Oct. 6-15, 1 death; Rio de Janeiro, Aug. 26-Sept. 1, 2 cases, 2 deaths; Sao Paulo, Aug. 25, 1 death.
China: Hinghua, Aug. 24, present; Hongkong, Aug. 25-31, 1 case, 1 death; Nantal, suburb of Foo Choo, Aug. 24, present, among natives.
Egypt: Alexandria, Sept. 16-28, 6 cases, 4 deaths; Port Said, Aug. 19-26, 1 case; Provinces, Dakahlieh, Sept. 16-18, 2 cases, 1 death; Minieh, Sept. 21-27, 1 case.
India: General, Aug. 24-31, 6,953 cases, 4,627 deaths; Bombay, Sept. 18-24, 30 deaths; Calcutta, Sept. 1-7, 6 deaths; Rangoon, Sept. 1-14, 50 deaths.
Japan: Osaka, Sept. 7-14, 2 cases, 2 deaths.
Korea: Nakanoshima Island, Sept. 14, 1 death (imported).
Mauritius: Aug. 16-Sept. 19, 21 cases, 18 deaths.

Marriages

ARTHUR A. CUSHING, M.D., to Miss Marjorie Gooding, both of Brookline, Mass., recently.

J. THOMAS GALBREATH, M.D., Delta, Pa., to Miss Clara M. Posey, at Baltimore, October 16.

GORDON F. MCKIM, M.D., to Miss Nell Katherine Myers, both of Springfield, Ohio, October 15.

THOMAS B. ALEXANDER, M.D., to Miss Marion C. Welch, both of Scituate, Mass., recently.

ARTHUR W. THOMAS, M.D., Jamaica, Vt., to Miss Anna Oliver of Salem, N. Y., October 17.

R. IRVINE ABELL, M.D., Louisville, Ky., to Miss Carrie Harting, at Lexington, Ky., October 19.

ALEXANDER B. JOHNSON, M.D., to Miss Louise Tilden White, both of New York City, October 15.

WILLIAM PETRY, M.D., Newark, N. J., to Miss Alma Johanna Menzel of Hilton, N. J., October 17.

FRED O. MORSE, M.D., Newburyport, Mass., to Miss Hattie Bailey of Amesbury, Mass., recently.

CHARLES PALEN, M.D., Dubuque, Iowa, to Miss Elizabeth Janet Spilman of Chicago, October 14.

LESLIE DUNLAP SNOW, M.D., to Miss Lena Follett Palmer, both of Weedsport, N. Y., October 15.

DANIEL E. EGAN, M.D., Chatsworth, Ill., to Miss Ida H. Condren of Streator, Ill., October 22.

KIRK P. MASON, M.D., Cawker City, Kan., to Miss Lina M. Finley of Manhattan, Kan., October 15.

ALLISON B. DAVIS, M.D., Fairfax, S. D., to Miss Alma B. MacAllister of Philadelphia, October 16.

ARTHUR F. BARNETT, M.D., Joplin, Mo., to Miss Pauline Crouse of Citronelle, Ala., September 25.

WILLIAM F. CONNERS, M.D., Scranton, Pa., to Miss Kathryn MacDonnell of Shamokin, Pa., October 17.

HENRY BURNER ANDERSON, M.D., to Miss Amy Carew Franklin, both of Newark, Ohio, September 25.

RAYMOND A. CLIFFORD, M.D., Ypsilanti, Mich., to Miss Lorinda Smith of Marlette, Mich., October 24.

DANIEL MAYER, M.D., Charleston, W. Va., to Mrs. Olive Brumbach of Cincinnati, Ohio, October 15.

ORVILLE H. BROWN, M.D., Mount Vernon, Mo., to Miss Margaret Paisley of Litchfield, Ill., October 17.

HARRY N. HOWE, M.D., Greenfield, Mass., to Miss Frances Stuart, at Gilbertsville, Mass., October 15.

MATTHEW URBAN CHESHIRE, M.D., Marshalltown, Iowa, to Miss Martha Theolin of Chicago, October 22.

JOHN CLAUDE HOLLIS, M.D., Isle of Pines, Cuba, to Miss Eloise Nowlan of Janesville, Wis., October 16.

LOUIS F. WILSON, M.D., Greensburg, Pa., to Miss Genevieve Haynes Adams, at Middlesburg, Va., October 17.

ROBERT CONARD, M.D., Blanchester, Ohio, to Miss Margaret Thompson of Mount Auburn, Cincinnati, October 9.

WILLIAM S. TERRIBERRY, M.D., New York City, to Miss Emily V. Reinhart of Flushing, Long Island, October 17.

H. C. POWELL, M.D., Morgantown, W. Va., to Miss Marguerite S. Mooney of Baltimore, at Norfolk, Va., October 14.

JACOB SOUTHEIMER ULLMAN, M.D., Natchez, Miss., to Miss Olivia Oakey of Glen Wilton, Va., at Richmond, Va., October 17.

Deaths

John W. Selman, M.D. Medical College of Indiana, Indianapolis, 1873; a member of the American Medical Association, Mississippi Valley Medical Association and Ohio Valley Medical Association; for several years president of the Hancock County Medical Society, and secretary of the county board of health; died at his home in Greenfield, Ind., October 19, after a prolonged illness, aged 60.

Josephine Kingsley, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1873; one of the founders of the Woman's Hospital Association of Detroit, and for five years house physician in that institution; a member of the State Medical Association of Texas and Bexar County Medical Society; died at her home in San Antonio, October 13, from heart disease, aged 63.

Daniel D. Roberts, M.D. University of Louisville (Ky.) Medical Department, 1871; of Paris, Ill.; a member of the American Medical Association; coroner of Edgar County, Illinois, from 1900 to 1904, and a member and chairman of the county board of supervisors; died in Walton, Ky., October 18, from tuberculosis, after a prolonged illness, aged 60.

Martin David Cronin, M.D. Central College of Physicians and Surgeons, Indianapolis, 1893; a veteran of the Spanish-American War, in which he served with the One Hundred and Sixtieth Indiana Infantry, U. S. V.; died suddenly at his home in Roll, Ind., October 10, of valvular heart disease, aged 37.

Benjamin Crawley Jones, M.D. Medical College of Virginia, Richmond, 1888; a member of the Medical Society of Virginia and Dinwiddie County Medical Society; a member of the county board of health; died suddenly at his home in Marmora, October 18, from cerebral hemorrhage, aged 42.

James F. Rinehart, M.D. University of Louisville (Ky.) Medical Department, 1889; a member of the American Medical Association, and a prominent practitioner of West Oakland, Cal.; died at the Fabiola Hospital, Oakland, October 14, two weeks after an operation for appendicitis, aged 39.

Oscar Ferdinand Salomon (License, Iowa), 1887; a surgeon during the Franco-Prusian War, and for a time in charge of a smallpox hospital in Berlin, Germany; for more than 20 years a practitioner of Avoca, Iowa; died at his home in that city, October 16, after an illness of two years, aged 63.

George W. Johnson, M.D. Medical College of Virginia, Richmond, 1862; a surgeon in the Confederate army during the Civil War, and representative from the Third congressional district of Missouri in the Thirty-fourth Congress; died at his home in Hemple, Mo., October 10, aged 76.

Oscar L. Southworth, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1866; once supervisor and for several years member of the board of trustees of Leonardsville, N. Y.; died at his home in that city, October 10, after an illness of one week, from nephritis, aged 68.

Stokely T. Payne, M.D. University of Louisville (Ky.) Medical Department, 1850; for many years a practitioner of Paducah and said to have been the oldest practitioner of Western Kentucky; died at the home of his son in La Center, October 17, from senile debility, aged 91.

Valentine Manahan, M.D. Jefferson Medical College, Philadelphia, 1850; a member of the New Hampshire State and Grafton County medical societies; one of the most widely known physicians of New Hampshire; died at his home in Enfield, October 15, aged 82.

Joseph F. Gray, M.D. College of Physicians and Surgeons in the City of New York, 1882; local surgeon of the Long Island Railroad at Rockaway, N. Y., for several years; died at his home in New York City, October 19, from pneumonia, aged 47.

Humphrey Ewing Buchan, M.D. Toronto University Medical Faculty, 1869; L.R.C.P. Edin., and L.F.P.S. Glasgow, 1869; assistant medical superintendent of the Asylum for the Insane, London, Ont.; died at Owen Sound, Ont., October 17, from cerebral hemorrhage.

Thomas A. York, M.D. Long Island College Hospital, Brooklyn, 1891; interne in that institution, and thereafter an official of the board of health of Brooklyn, died at his home in that city, October 17, from heart disease, after an illness of two years, aged 38.

Dale Lucas, M.D. University of Kansas School of Medicine, Kansas City and Lawrence, 1906; of Hillsdale, Kan.; house surgeon of the Missouri Pacific Hospital Kansas City, Mo.; died at that institution, October 14, from cancer, after a long illness, aged 32.

David Branch Clark, M.D. College of Physicians and Surgeons in the City of New York, 1876; a Confederate veteran, and for several years a practitioner of New York, died in Lee Camp, Soldiers' Home, Richmond, Va., October 8, aged 67.

Stephen F. Bonney, M.D. Indiana Medical College, La Porte, 1848; a pioneer practitioner of Lewis County, Missouri; died at his home in Taylor, October 16, from heart disease, from which he had suffered for several years, aged 86.

E. H. LeDuc, M.D. Medical Department of Linn University, Chicago, 1863; for many years a practitioner of Aurora, Ill.; died at his home in Los Angeles, Cal., October 16, after a prolonged illness, aged 78.

Berthold E. Krystall, M.D. College of Physicians and Surgeons in the City of New York, 1886; a member of the staff of the Vanderbilt Clinic; died at his home in New York City, October 14, aged 52.

Alexander Crawford, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1871; died at his home in Warriorsmark, Pa., from spinal paralysis, aged 62.

Abraham Parsons, M.D. Charity Hospital Medical College, Cleveland, 1870; died at his home in Brinkhaven, Ohio, October 4, from chronic nephritis, aged 60.

John G. Campbell, M.D. College of Physicians and Surgeons, Baltimore, 1879; died recently at his home in Homer City, Pa., and was buried October 12.

Henry C. Walkup, M.D. New York University, Medical College, New York City, 1857; died suddenly at his home in McIntosh Fla., October 17.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, November 4. Secretary, Dr. S. L. Lee, Carson City.

LOUISIANA Homeopathic Board of Medical Examiners, New Orleans, November 4. Secretary, Dr. Gayle Aiken, 1102 St. Charles Ave., New Orleans.

NEBRASKA State Board of Health, State House, Lincoln, November 6-7. Dr. E. J. C. Sward, Oakland.

MAINE State Board of Registration of Medicine, City Building, Portland, November 12. Secretary, Dr. Wm. J. Maybury, Saco.

CONNECTICUT Homeopathic Medical Examining Board, New Haven, November 12. Secretary, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT Eclectic Medical Examining Board, New Haven, November 12. Secretary, Dr. T. S. Hodge, Torrington.

CONNECTICUT (Regular) Medical Examining Board, City Hall, New Haven, November 12-13. Secretary, Dr. Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, November 12-14. Secretary, Dr. Edwin H. Harvey, State House, Boston.

WEST VIRGINIA State Board of Health, Waldo Hotel, Clarksburg, November 12-14. Secretary, Dr. H. A. Barbee, Point Pleasant

MISSOURI State Board of Health, Southern Hotel, St. Louis, November 19-21. Secretary, Dr. J. A. B. Adcock, Warrensburg.

FLORIDA (Regular) Board of Medical Examiners, Jacksonville, November 20-21. Secretary, Dr. J. D. Fernandez, Jacksonville.

Cornell Looking to Higher Standards.—In his fifteenth annual report President Schurman calls attention to the adoption of a higher standard of preliminary education on the part of fifty or more medical schools of the country and urges that Cornell should not be content to fall behind these colleges which expect to require one or more years of work in a college of liberal arts for admission to the medical course. He points

to the overcrowded medical curriculum and suggests that this could be relieved by requiring that some of the subjects be taken as premedical work. He also makes the suggestion that the medical college of Cornell should be "devoted to research in the medical sciences and to the training of graduates of colleges of arts and sciences" who propose to study medicine and "from whom are most likely to come that small body of learned investigators or skilful practitioners who constitute the crown of the medical profession." That this last suggestion is timely is evidenced by the increasing demand on the part of the better medical colleges for trained and skilful investigators and instructors.

Alabama's New Practice Act.—Under Alabama's new practice act the Board of Censors of the Medical Association of the State of Alabama constitutes the State Board of Medical Examiners. The president of the board is Dr. W. H. Sanders. The board will meet to examine applicants at least twice each year in Montgomery. The fee for examination is $15.00. An applicant who fails is entitled to another examination within one year without additional fee.

The applicant must fill out an application blank, giving his name, age, residence, college and date of graduation (if a graduate), as well as certificate of good moral character. He must pass a written examination in anatomy, physiology, chemistry, the etiology, pathology, symptomatology and diagnosis of diseases, obstetrics and obstetric operations, gynecology, surgery, physical diagnosis, diseases of the eye, ear, nose and throat, hygiene and medical jurisprudence. Graduation from a medical college is not essential. Certificates of license must be recorded in the office of the probate judge of the county wherein the holder resides and re-recorded in case of removal to another county. Failure to have certificate so recorded will prevent recovery of medical fees at law. The board is empowered to refuse or revoke a license for cause.

Any person who treats, or offers to treat, diseases of human beings, by any system of treatment whatsoever, without having obtained a certificate of qualification, will be deemed guilty of a misdemeanor and subject to a fine of from $50 to $500, or imprisonment for from one to three months, or by both fine and imprisonment.

Nevada February Report.—Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports that no applicants were examined at this meeting, but that 76 applicants were registered on presentation of satisfactory credentials. The following colleges were represented:

College.	Year of Grad.
Coll. of P. & S., San Francisco	(2, 1898) (1899)
Cooper Med. Coll.	(1887) (1888) (1894) (1903) (1905) (2, 1906)
University of Cal.	(1900) (1901) (1902) (1905) (2, 1906) (1907)
California Med. Coll.	(1890) (1898)
College of P. & S., Los Angeles	(2, 1905)
University of Southern California	(3, 1905) (1906)
Denver Coll. of Med.	(1894) (1901) (1902)
Colorado School of Med.	(1893) (1902)
Gross Med. Coll.	(1896)
Atlanta Med. Coll.	(1895)
Harvey Med. Coll., Chicago	(1902)
College of P. & S., Chicago	(1897) (1905)
Rush Med. Coll.	(1893)
Dearborn Med. Coll.	(1904)
Chicago Homeopathic Med. Coll.	(1894)
Medical College of Indiana	(1902)
College of P. & S., Keokuk	(2, 1896)
Keokuk Med. Coll.	(2, 1900)
University of Iowa	(1899)
Louisville Med. Coll.	(1880)
Kentucky School of Med.	(1886) (1892)
Tulane Univ. of Louisiana	(1906)
Baltimore Med. Coll.	(1903)
Harvard Med. School	(1894)
College of P. & S., Boston	(1906)
University of Minnesota	(1900)
University of Missouri	(1875)
Missouri Med. Coll.	(1886)
Barnes Med. Coll., St. Louis	(1899)
American Med. Coll., St. Louis	(1905)
St. Louis Coll. of P. & S.	(1898)
Kansas City Med. Coll.	(1902)
St. Louis Med. Coll.	(1877)
Dartmouth Med. School	(1891)
Bellevue Hosp. Med. Coll.	(1884) (1897)
Omaha Med. Coll.	(1893)
New York University	(1882)
Eclectic Med. Coll., New York	(1882)
College of P. & S., New York	(1905)
Cleveland Homeo. Med. Coll.	(1893)
Pulte Med. Coll.	(1881)
Medical Coll. of Ohio	(1883)
Eclectic Med. Institute, Cincinnati	(1896)
University of Oregon	(1905)
Jefferson Med. Coll.	(1873) (1881)
Vanderbilt University	(1893)
Royal College of P. and S., Ontario	(1885)
Royal College of P. and S., London	(1896)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

An Ex-Secretary's Experience.

Dr. C. C. Stephenson, Little Rock, Ark., now president and for a number of years secretary of the Arkansas Medical Society, has an article in the September number of the *Journal of the Arkansas Medical Society*, entitled "Some Views Concerning Medical Organization as Entertained by an Ex-Secretary." If there is any one who should be in a position to entertain some positive views on organization it is one who has served as secretary of a state association. During Dr. Stephenson's incumbency of the state secretary's office, the state society increased in numbers and in influence. Views drawn from his experience are therefore well worth considering.

Dr. Stephenson divides members into three classes—weak-sighted, near-sighted and far-sighted. The weak-sighted member sees nothing in medical organization. He can not be induced to attend meetings and so remains as a worthless asset to the society. The second class, Dr. Stephenson describes as near-sighted. These members can only see the benefits and results of organization which come very close to them and which affect them personally. This class should be encouraged, as there is hope for them, and some day they may be able to render good service. The third class are the far-sighted men who are always on the lookout for something good in medical organization and who are trying to better conditions, bring in new members, aid the secretary and encourage the society in all good work. They are the members who attend the society meetings, rain or shine. They readily perceive the benefits of medical organization to themselves and to their patients. They are fully alive and are the members who are moving forward and upward.

Dr. Stephenson also discusses the motives which lead men to join medical societies. One man joins it from a purely mercenary motive, believing that membership will place him in a position where he can make more money. Another wishes to use the society as a means of self-advertisement. A third class of men really join from philanthropic motives, for the good that comes to them from medical organization and for the benefit to the community and society.

Regarding the influence of medical organizations, Dr. Stephenson says: "The laity are not slow in seeing the merits and demerits of the physician. The only question that used to be asked was: 'From what medical school did you graduate?' Now it is: 'Are you a member of the medical society?'" "The one supreme object of medical organization," he says, "is the broadening of the intellect of the individual physician. Any member who is not securing this is missing the best and most valuable part of his membership. Members should attend the meetings of their society and encourage it by their presence so as to stimulate the officers in the discharge of their duties and be ready to serve when called on. The county secretary is the hardest worker of any of your members and receives less thanks than any one else. The satisfaction which comes to him is that of duty well performed."

"No Ill Effect."

The Greeley (Colo.) *Tribune*, October 10, contains an editorial with the above heading, commenting on its recent change of policy regarding advertisements of itinerant doctors. The statements made are so frank and honest that we feel justified in quoting the editorial in full:

> The refusal by the *Tribune* some time ago to accept advertising matter from the traveling doctors, fakes or otherwise, has had the effect of most of them giving this city a wide berth since then. One or two have tried it and went away disgusted, because of their inability to reach the people, whose money they were after. We have not noticed any great increase in the death rate since the people were more or less deprived of the services of these itinerant health venders. If other papers in this section will follow the *Tribune's* lead in this regard it is probable that the business can be killed off altogether and the people of northern Colorado not alone be thousands of dollars better off financially, but actually better off in health. Of course, there are other methods of publicity besides newspaper advertising, but that is the surest and cheapest. A great many people will take what is printed in the home paper for sound gospel, whether it be editorial or "patent medicine." It is therefore

up to the self-respecting newspaper man to see that nothing that can not be well substantiated goes into the columns of his paper. Very few of the claims made for "patent medicines" can be substantiated and still fewer of the claims of the traveling doctors.

Editors and publishers of newspapers are realizing that they have some responsibility regarding the matter which they print and that this applies to the advertising pages as well as to the news columns. When editors fully appreciate their responsibilities as well as the possibilities of clean journalism, the problem of educating and enlightening the public will be solved.

Postgraduate Work.

The Washington County (Iowa) Medical Society has issued a program for the six months' meetings from September to March, following the course laid out for postgraduate study by the American Medical Association. For the December meeting an afternoon session for the members of the society is provided and an evening meeting for the profession and the public, to be held in conjunction with the meeting of the Farmers' Institute at Washington. The program for the public meeting includes papers by members of the society on: Food and the Medical Value of Alcohol; The Importance of Pure Milk; Tuberculosis, a Preventable Disease; The Control of Contagious Diseases, and Typhoid Fever.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Second Month.

SECOND WEEKLY MEETING.

Physiology of the Brain.

Motor Functions: Motor area, methods of localization, trace fiber from cortex to arm.

Sense Areas: Muscle sense, pressure and temperature sense, pain sense.

Center of Vision: Location, lower centers.

Auditory Center: Location, two roots of cranial nerve.

Centers of Smell and Taste.

Speech Centers: Motor and sensory aphasia.

Functions of Cerebellum: Coordination, psychical functions, location of function.

Functions of Medulla: Respiratory and circulatory centers.

Cerebral Localization.

Sensori-motor Area: Fissure of Rolando, anterior and posterior central gyri, paracentral lobule, operculum, third frontal gyrus. Leg, arm and head regions. Hemiplegia, monospasm, Jacksonian epilepsy. Muscular sense, parietal lobes.

Speech Areas: Sylvian fissure, third frontal convolution, motor aphasia. First and second temporal convolutions, sensory aphasia. Visual-speech area, lower parietal.

Right and Left-handed Persons.

Sight Area: Occipital lobes, hemianopsia.

Sound Area: First and second temporal convolutions.

Psychic Centers: Frontal lobes.

"Silent Areas."

Cerebral Topography: Fissure of Rolando, fissure of Sylvius. Horsley's method, Krönlein's method, Chiene's method.

Fractures of Vault of Cranium.

Varieties: Fissured, fragmented, comminuted, perforated, simple and compound. Fracture of inner or outer table alone. Depression, central and peripheral.

Mechanical principles involved "bending" and "bursting" fractures. Lines of fracture.

Prognosis: Depends on brain injury and infection. Extent of injury, area of brain involved, degree of depression, simple or compound fracture. Remote effects, headache, epilepsy and insanity.

Treatment: (1) Fracture without depression and without cerebral symptoms, (2) with depression, (3) with cerebral symptoms, (4) compound fractures.

Society Proceedings

COMING MEETINGS.

Ohio Valley Medical Association, Evansville, Ind., Nov. 13-14.
Medical Society of Virginia, Chase City, Nov. 12-15.
Southern Surgical and Gyn. Assn., New Orleans, Dec. 17-19.
American Association of Anatomists, Chicago, Dec. 26-27.
Western Surgical and Gyn. Assn., St. Louis, Mo., Dec. 30-31.

SOUTHERN MEDICAL ASSOCIATION.

First Annual Meeting, held in Birmingham, Ala., September 24 to 26.

The Vice-president, DR. MACK ROGERS, Birmingham, in the Chair, in the absence of the President.

The society, which is the South and Gulf Branch of the American Medical Association, and is the outgrowth of the old Tri-State Society of Alabama, Georgia and Tennessee has had added to its territory the states of Missouri, Louisiana and Florida.

Addresses of welcome were made by Alderman J. R. Copeland on the part of the city; by Joseph T. Babb on the part of the Commericial Club, and by Dr. Benjamin L. Wyman on behalf of the Jefferson County Medical Society. Dr. Jere L. Crook, Jackson, Tenn., responded on behalf of the association.

President's Address.

The address of the president, Dr. Henry H. Martin, Savannah, Ga., dealt with the progress of the profession and especially with the necessity for organization of medical men and gave a detailed history of the causes which led up to the organization of the association.

Section Work.

After the general session the Association divided itself into three sections for work. Dr. Frederick W. Parham, New Orleans, was the president of the section on surgery; Dr. Thomas D. Coleman, Augusta, Ga., president of the section on medicine, and Dr. Lewis G. Woodson, Birmingham, Ala., president of the section on ophthalmology, otology, laryngology and rhinology.

Election of Officers.

The following officers were elected: President, Dr. Benjamin L. Wyman, Birmingham, Ala.; vice-presidents, Drs. Wellington P. McAdory, Birmingham, for Alabama; Hiram M. Folkes, Biloxi, for Mississippi; Frank H. Watson, New Orleans, for Louisiana; Gerry R. Holden, Jacksonville, for Florida; Raymond Wallace, Chattanooga, for Tennessee and Alfred L. Fowler, Atlanta, for Georgia; and secretary-treasurer Dr. Oscar Dowling, Shreveport, La.

Section Officers.

The following section officers were elected: Medicine, Dr. Seale Harris, Mobile, Ala., president, and Dr. Henry E. Mitchell, Birmingham, Ala., secretary; surgery, Dr. Willis F. Westmoreland, Atlanta, Ga., president, and Dr. Jere L. Crook, Jackson, Tenn., secretary; ophthalmology, otology, laryngology and rhinology, Dr. John T. Herron, Jackson, Tenn., president, and Dr. Arthur B. Harris, Birmingham, Ala., secretary. The president appointed Dr. William W. Butterworth, New Orleans, councilor for Louisiana and will name the Florida councilor later.

Atlanta, Ga., was selected as the place for the 1908 meeting.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Second Annual Meeting, held in Hot Springs, Ark., October 7 to 10, 1908.

The President, DR. CHARLES M. ROSSER, Dallas, Texas, in the *8 to 10, 1907.*

This association was organized in Oklahoma City in 1906 and includes the states of Missouri, Kansas, Arkansas, Oklahoma and Texas.

President's Address.

The president, Dr. Charles M. Rosser, chose as the subject of his address, "Moralities of Medicine," and in which he gave

as the mission of the medical society the determination of modern medical knowledge in the territory which it includes. The medical profession in its crusade against the employment of secret remedies declares for the freest distribution of ideas and discoveries, whether in materia medica or methods, thus denying to its individual members the peculiar financial benefits which ordinarily obtain for inventors in this line of work. The profession stands singly as the one institution or agency which gives practical assent to the sacredness of human life. Its glory is not so much in its men of brilliant mark as in the character and qualifications of the rank and file; not more in the advanced learning of its leaders than in the uniformity with which scientific discoveries and clinical observations become available for the service of the suffering sick wherever found.

Kansas City, Mo., was selected as the place for the next meeting.

Election of Officers.

The following officers were elected: President, Dr. Thomas E. Holland, Hot Springs; vice-presidents, Drs. Samuel S. Glasscock, Kansas City, Kan.; Bascom J. Vance, Checotah, Okla.; Samuel C. James, Kansas City, Mo.; Jacob E. Gilchrist, Gainesville, Texas; secretary-treasurer, Dr. Fred H. Clark, El Reno, Okla., and members of the executive committee, Drs. C. Travis Drennen, Hot Springs; William G. Moore, St. Louis, Mo.; L. Haynes Buxton, Oklahoma City; J. H. Johnson, Independence, Kan., and T. Lawson Moody, San Antonio, Texas.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Annual Meeting, held in Reading, Sept. 23-26, 1907.

(*Continued from page 1465.*)

An Easy Method of Making Osteoplastic Flaps in Cranial Surgery.

DR. JOHN B. ROBERTS, Philadelphia, stated that osteoplastic resection of the skull is often more satisfactory than simple trephining, and described in detail the method of doing such operations with no other instruments than a segment trephine and a wedge-shaped nasal saw.

Perforation of the Gastrointestinal Tract by Ingested Foreign Bodies.

DR. GEORGE G. ROSS, Philadelphia, reviewed the literature on this subject, stating that the vagueness of the cause renders the diagnosis difficult. He reported several cases: The first case presented the typical symptoms of appendicitis, and immediate operation was done under ether anesthesia, the appendix was removed, and a piece of wood like a toothpick was found at the bottom of the wound. The second case was one of internal anal fistula of two years' standing, and operation revealed a piece of fishbone one-fourth inch long.

DISCUSSION.

DR. WILLIAM L. ESTES, South Bethlehem, stated that it is comparatively rare since the introduction of the *x*-rays to see foreign bodies perforating the intestines, but reported that he had recently found and removed from the appendix a grape seed of moderate size.

DR. JOHN B. ROBERTS, Philadelphia, reported a case in which two needles which had been previously swallowed were found, one imbedded in the liver and the other back of the liver. The patient had had hemorrhage from the stomach, for which a gastroenterostomy was done, and the needles discovered.

DR. WILLIAM L. RODMAN, Philadelphia, reported the case of a convict in the Kentucky penitentiary, who had abscess of the abdominal wall, on opening which two headless pins were found and removed, and the only way they could be accounted for was the fact that some fifteen or sixteen years before he had been a painter and had been in the habit of putting these pins in his mouth and using them to stop up holes in the work.

DR. G. C. ROSS, in closing, stated that in the majority of cases there is no history, which makes them all the more difficult to diagnose.

Analysis of Gastric Contents Following Gastroenterostomy.

DR. CLEMENT R. JONES, Pittsburg, stated that there is a gradual increase of free and combined hydrochloric acid after test meals at intervals of two weeks or more following operation, which is caused by the increase of muscular control over the anastomotic opening. He recommended a larger opening, when the analysis, prior to operation, shows normal secretion of the stomach or excess of free hydrochloric acid, and, in conclusion, urged the necessity for observation of feces and stomach contents for a long time after operation in order to obtain the best results in these cases.

Referred Pain in Surgical Conditions.

DR. WILLIAM L. ESTES, South Bethlehem, called attention to the importance of study and appreciation of the manifestations of referred pain, as instances of the condition are common, and sometimes lead to grave mistakes in practice and surgical diagnosis. He considered the subject under four categories: 1. Manifestations of pain in the peripheral or terminal filaments of a nerve when the irritation occurs at the root or in the continuity of the nerve. 2. Pain expressed in the continuity of a nerve from the irritation of the terminal filaments. 3. Expression of pain in a communicating or assisting group of nerves from an irritation of an associated trunk or distribution. 4. Vicarious referred pain, or pain expressed in one of a pair of organs when the other is the diseased organ.

DISCUSSION.

DR. J. C. O'DAY, Oil City, reported the case of a woman injured by a gunshot, who was completely paralyzed from the lower limbs down. On the second or third day she developed a severe neuritis of the arms, but with no temperature. On the fourth day she developed pain in both legs, although she could not feel a pin, heat or cold therein, and the pain was believed to be a reflex condition.

DR. W. E. DARNALL, Atlantic City, N. J., reported a case, in which the symptoms were pain, apparently a little indigestion, a little vomiting, temperature 101 F., but no tenderness, except in the left kidney. There were symptoms of acute renal colic. Four days later the man died and the postmortem revealed a gangrenous appendix, tied up in a mass of adhesions, involving the left ureter.

DR. ELWOOD B. HAWORTH, Allegheny, stated his belief that it is the unusual pains which so often disturbed the surgeon, and cited as instances cases of cystic calculus, volvulus of the small intestine, etc.

DR. WILLIAM L. RODMAN, Philadelphia, reported a case in which the pain in the abdomen was the most prominent symptom, and the case was believed to be one of appendicitis, but really proved to be one of pneumonia.

DR. J. K. WEAVER, Norristown, reported a case of pneumonia in which the most prominent symptom was pain in the right knee, although the physical signs of pneumonia were present, and autopsy following death due to pneumonia showed the knee to be normal.

DR. BYRON H. JACKSON, Mayfield, referred to an article appearing in the *Lancet* some time ago, which referred to pain in the groin in cases of hernia and appendicitis, and reported a case in which there was pain in the groin which proved to be one of empyema.

Postoperative Complications; Prophylaxis; Methods of Early Diagnosis.

DR. FRANK F. SIMPSON, Pittsburg, stated that such complications are comparatively rare, but that by a wise choice of time, type and technic of operation, they may be still further reduced. Early recognition and correct interpretation may be facilitated by the systematic practice of showing diagramatically on a single sheet all the important functions of the body and their deviations from normal.

The Medicolegal Status of the Roentgen Ray.

DR. GEORGE C. JOHNSTON, Pittsburg, referred to the increasing frequency of the use of these methods as evidence in courts of law, and the liability of misinterpretation, if the evidence is not given by the Roentgenologist. He deprecated the practice of giving prints to patients, and called attention to

the necessity in all cases of having an expert interpret the plates.

Results in the Treatment of Sarcoma.

DR. WILLIAM S. NEWCOMET, Philadelphia, stated that all tumors of a benign nature should be removed prior to the application of the *x*-rays. He considered in detail the results which he had obtained in the various classes of cases, and in conclusion stated that the *x*-ray is of most value in early stages of sarcoma, and should always be used after operation, over an extensive area. In very late cases it will often produce a retrograde metamorphosis with apparently complete disappearance of the disease.

Conservative Treatment for the More Malignant and Recurrent Types of Sarcoma.

DR. W. WAYNE BABCOCK, Philadelphia, read this paper, and lantern slides of various cases were shown by Dr. George E. Pfahler. The authors cited traumatism as the most frequent localizing factor of the primary lesion and operative traumatism of the recurrent types. They stated that sarcomata are the least amenable of all to radical treatment and that these same conditions offer the best results for the use of the *x*-ray. They reported several cases, and cited the importance of the combined operation whenever possible.

DR. WILLIAM L. RODMAN, Philadelphia, thinks that the sending of patients to get *x*-rays made should be discontinued. He reported three cases, one of sarcoma of the upper jaw, occurring seven years ago. After operation the *x*-rays were employed and it has not recurred in these seven years.

DR. JOHN B. ROBERTS, Philadelphia, emphasized the importance of giving a sufficient amount of the *x*-rays and for a sufficient length of time in order to get the best results.

DR. ERNEST LAPLACE, Philadelphia, emphasized the importance for the same kind of surgical procedure in the removal of sarcoma, as in operations in other parts of the body, and stated his belief that recurrence is largely due to retained germs. He advocated subcutaneous enucleation followed by *x*-ray treatment.

The Diagnosis of Perforation in Typhoid Fever.

DR. ARTHUR NEWLIN, Philadelphia, stated that there are 35,000 deaths in the United States each year from typhoid fever, and emphasized the importance of immediate recognition and treatment of the condition, citing as three cardinal points in the diagnosis abdominal pain, rigidity and tenderness on palpation.

Report of Cases of Perforation in Typhoid Fever Operated on at the Pennsylvania Hospital.

DR. CHARLES F. MITCHELL, Philadelphia, considered the symptoms, time and method of operation, postoperative treatment and report of cases. He particularly urged immediate operation under a general anesthetic. The perforation should be closed at once, after merely wiping out the abdominal cavity and without flushing.

Experience in the Surgery of Typhoid Perforation.

DR. GEORGE L. HAYES, Pittsburg, gave a detailed report of nineteen cases of this condition and the symptoms and treatment. These patients had all been suffering from the condition for from one to thirty-one hours before the operation, the perforation in one case being in the ileum, and in two in the appendix. The symptoms are usually abdominal pain, sometimes referred to the bladder and external genitalia.

DISCUSSION.

DR. ERNEST LAPLACE, Philadelphia, stated his belief that the bad results are due principally to the fact that the surgeon is consulted too late at a time when the patient has general sepsis. He also emphasized the importance of searching for other abscesses at the time of the operation.

DR. DAVID L. EDSALL, Philadelphia, referred to the similarity between typhoid fever perforation and lobar pneumonia, citing two cases in which symptoms of perforation occurred which were really due to lobar pneumonia, and three others in which symptoms were produced supposed to be due to the pneumonia, but which on autopsy were shown to be due to perforation.

DR. ELWOOD B. HAWORTH, Allegheny, declared that he believes the most important thing to decide is whether or not the case is one of typhoid fever, and if it is decided so to be, and there are symptoms of peritonitis, such as rigidity, especially in the right rectus muscle, and particularly if increased by pressure and accompanied by vomiting, operation is justified.

DR. W. WAYNE BABCOCK, Philadelphia, believes that spinal anesthesia is superior to general anesthesia, and reported four cases in which operation was done by this method; in three cases the patients recovered, the fourth patient died two days after the operation from peritonitis which was present at the time of the operation.

DR. JOHN H. GIBBON, Philadelphia, urged the importance of early operation, and the necessity for educating the general practitioner in the diagnosis of the cases. He reported four cases, in two of which operation was performed about eighteen or twenty hours after the perforation; both of these patients died. In the other two cases one patient was operated on between one and one and a half hours after the perforation and recovered, and the other was operated on three hours after the perforation and is now on the road to recovery.

DR. G. L. HAYS stated that many of the patients he treated were foreigners who were brought into the hospital one or two weeks after the commencement of the disease, and some hours were required before their consent to the operation could be obtained, and hence the best results could not be expected. He also stated that he had secured the best results from the use of cocain, which avoided the dangerous complications of a general anesthetic.

(To be continued.)

KENTUCKY STATE MEDICAL ASSOCIATION.

Fifty-second Annual Session, held at Louisville, Oct. 15-17, 1907.

(Continued from page 1466.)

Gall-Bladder Surgery.

DR. W. A. QUINN, Henderson, discussed the surgical treatment of diseases of the gall bladder. After paying a tribute to Ephraim McDowell, he referred to the work of J. Marion Sims, who did cholecystotomy in Paris without having heard of Bobbs' case in Indiana, but the patient died eight days after the operation. Bobbs' operation was purely accidental. Since the time of Sims, a better technic in gall-bladder surgery has been gradually developed until now operations on the gall bladder are frequently done successfully by such men as the Mayos, Mayo Robson, Moynihan, Murphy, Davis and many others. The diagnosis of simple gallstone disease is based on colic. The operation for uncomplicated gallstone disease is one of the simplest operative procedures in surgery, in fact, as simple as the interval operation for appendicitis, and the results are ideal.

Lacerations of the Vaginal Outlet.

DR. F. M. BEARD, Shelbyville, spoke of the causes of these lacerations, both predisposing and exciting. He referred to partial and complete tears, with or without tear of the vaginal wall. In all these tears the early primary operation is the one of necessity. Secondary operation should be advised in all cases demanding it. He described the operation he does, and reported two cases of secondary operation. In the first case there was a complete laceration of the perineal body of thirty-seven years' standing, with beginning rectocele and cystocele. Operation was followed by complete recovery. In the second case complete rupture of the vaginal septum took place one year ago. The primary operation was a failure, followed by incontinence of feces. A secondary operation was attended with success.

DR. M. CASPER, Louisville, described the technic of a new perineorrhaphy.

Management of a Primipara During Pregnancy and Labor.

DR. LILLIAN H. SOUTH, Bowling Green, said a primipara should be encouraged to take exercise and pleasant diversions. The diet should be plain and nutritious food that is easily

digested. The restriction of diet in two cases enabled labor to terminate uneventfully. An examination of the urine is very important in managing any obstetric case. It should be carefully examined for albumin and casts at regular intervals, with a view to preventing eclampsia. The mortality from eclampsia is high. Treatment should be preventive rather than curative. One can prevent eclampsia by taking cognizance early of the renal changes which exist. A woman who is very strong and healthy at other times is a ready prey to toxemia during pregnancy, consequently careful early attention to urinalysis will prevent eclampsia. Cesarean section should only be the operation of election. Vaginal examinations at the onset of labor do harm. All instruments should be kept sterilized and ready for use. The preparation of the patient for labor was discussed at considerable length.

DISCUSSION.

DR. JOHN G. CECIL thinks that outdoor exercise, normal living and careful watching of a primipara are very essential. There is no situation in life to him that is more pathetic than to see a young wife taken to the cemetery as a result of an effort on her part to reproduce her kind. It is the saddest of all deaths to him. He believes it is a good plan for a physician to decline to accept an obstetric case unless he is employed long enough before the labor to give him ample time to study the case and to prepare for the emergencies which so often occur. The time to treat puerperal eclampsia is before it occurs. It is a routine practice of his in every case of labor he expects to attend to have the urine examined carefully and frequently with reference to albumin and quantity of urea.

DR. D. G. SIMMONS endorsed the paper in its entirety. After an observation extending over many years he has found nothing comparable to the use of carbonate of magnesia for relieving heartburn in these cases. It neutralizes the acid, relieves the pain and discomfort incident to its presence, but still more important, it forms a chemical purgative salt which acts most admirably in keeping the patient's bowels open when there is a tendency to constipation.

DR. I. A. SHIRLEY thinks urging the practitioner not to make vaginal examinations in these cases has been greatly exaggerated. An examination, properly conducted, with a clean hand and a clean patient, is attended with little or no danger. He relies on ergot to bring about contractions of the uterus. He does not think every lacerated perineum needs repairing. It is natural for a primipara to have a torn perineum, but when it is slight Nature will take care of it and do much better than a bungling operator who attempts to sew it up.

DR. B. L. HOLMES said the fewer digital examinations are made, the fewer cases of puerperal infection will be noticed. The practitioner should make as few vaginal examinations as possible. As a preventive of tears of the perineal body, he recommends episiotomy.

DR. WILLIAM H. WATHEN referred to the treatment of the nausea of pregnancy, and said there are two causes apparently distinct which operate differently. One is a neurosis, reflex or otherwise, which never causes death if the patients are properly treated. The other is the absorption into the system of chemical poisons generated in the chorionic structures, either in the syncytial tissue or in Langhans' layer. This will go on to death of the woman unless labor is terminated promptly; but this is such an infrequent condition that a practitioner may go a lifetime without meeting with it. He has had many cases in his earlier experience of nausea of pregnancy where he has found that vomiting that existed for six or seven months yielded promptly to appropriate treatment. In the ordinary nausea of pregnancy, where there are no chorionic products absorbed in the blood, the patients will get well if they are properly fed. They should be given food per rectum; the stomach should be kept empty, giving them nothing by the stomach except one-eighth to one-quarter grain of cocain and one drop of carbolic acid.

DR. T. A. FRAZIER believes that when the vagina is irrigated before labor is completed, or whenever it is irrigated after labor is completed, and after the placenta has been delivered, the chances of puerperal infection are increased.

DR. F. H. CLARK thinks the essayist goes too far when she attributes all cases of puerperal eclampsia to the kidneys. The kidney is only one of the organs at fault in the manufacture of the poison.

DR. J. T. GREEN agreed with Dr. Wathen that the most direct cause of eclampsia in his experience is a neurosis, in which the sympathetic nervous system is very irritable, and on this account there is vasomotor constriction. The arterial tension is usually greatly increased, and on account of this irritation there is the generation of a toxin. This has been borne out where an examination of the urine has been made and the proper waste has been found to be eliminated from the kidneys. He believes the convulsions in many cases are purely the result of nervous irritation.

The Work of County Society Officers.

DR. J. W. CRENSHAW, Versailles, gave the history of the Woodford County Medical Society and its struggle for existence during three or four years. He enumerated the causes which operated in preventing the steady and healthy growth of the society from its inception. He pointed out its condition now and the causes conducive thereto. The society is now in good working order. The author pointed out the conditions necessary for an ideal medical society.

DISCUSSION.

DR. D. C. BOWEN said that it is the duty of every society in the state to select the best men for officers, particularly those who are the best qualified and are the most energetic.

DR. CURRAN POPE said that the county society is the basis for mutual help, by means of which the standard can be raised, not only by the betterment of its members and their education, but in raising the standard of those who are coming in by the handclasp of good-fellowship, etc.

The Surgery of Inguinal and Femoral Hernia.

DR. AUGUST SCHACHNER, Louisville, discussed the anatomy concerned in the production of hernia; also the anatomy concerned in the cure of hernia. He pointed out the basic principles that are involved in the various operations for the relief of hernia, many of which, he said, are mere modifications of minor details rather than a change in the basic principles, which have virtually remained intact throughout the vast variety of operative procedures. The paper was illustrated by numerous charts.

Some Therapeutic Facts, Fads and Fancies.

DR. W. L. HEIZER, New Haven, said that about the worst abused set of drugs on the market and the one that has been outraged most often is that class known as digestive ferments. The Council on Pharmacy and Chemistry of the American Medical Association has examined a large number of articles widely advertised as digestants, and nearly all of them failed to show the results claimed for them. Carelessness and blind credulity on the part of physicians are a part of the causes of the wrongs inflicted on people by the doctors themselves, and medical colleges are partly to blame for not teaching enough pharmacy and therapeutics. The author condemned in vigorous terms such preparations as the syrup of figs, syrup of hypophosphites, sal hepatica, and the hyoscin-morphin-cactin anesthesia tablet. He said the manufacturer of the latter tablet is financially interested in it, and being a physician is licensed to use the methods of nostrum venders in the councils and societies. Scopolamin and hyoscin are practically identical, and the scopolamin-morphin combination has been tried in Germany and found unsafe. The cactin is added pretty much for the same purpose that kargon compound is added to that prescription advertised for the laity last winter for a little of everything, telling them to buy the ingredients and mix them at home. The purpose of exposing these preparations is simply to recall to mind that it is unwise to use a single drug, or combination of drugs, with which physicians are not familiar. Physicians should accept none but the standard authorities for the actions of drugs or their indications. They should use none but pure drugs of uniform strength made by manufacturing houses of repute. They should decry the advertising on the part of medical journals of these nostrums, and advocate the use of knowledge of dis-

eases at all times for the relief of morbid conditions and their symptoms.

DISCUSSION.

DR. GEORGE H. SIMMONS, Chicago, believes that there is not a bigger curse afflicting the medical profession of the United States to-day than the commercialization of therapeutics. There is not a single thing in the whole realm of commercialism in this country that is so difficult to attack, that has so much money back of it, as the proprietary and "patent medicine" business, as they are linked together. At one time one of the best chemists in America, an authority on digestants, Professor Scheffer, of Louisville, investigated one of the popular nostrums, lactopeptin, and read his report before the American Pharmaceutical Association in 1877. Scheffer not only reported on it from a chemical but from a physiologic standpoint. He showed conclusively that it has absolutely no effect as a digestant; that the only thing it possesses as a therapeutic agent is that it contains some alcohol. He demonstrated that the composition claimed for it is absolutely impossible, and that pepsin and pancreatin are absolutely incompatible. Yet the attention of physicians was not called to this exposé until it was done by the report of the Council on Pharmacy and Chemistry on digestants. Nostrum venders have become so brazen and the members of the medical profession have tolerated the business until it is to their disgrace, and he believes that if physicians will only use drugs of known therapeutic value given in the standard authorities, in a short time three-fourths of the nostrums now placed on the market will be banished.

DR. W. S. BOGGES said he is a therapeutic optimist. He believes in the efficacy of drugs, and until the profession gets away from the idea that drugs, and drugs alone, are all physicians are to depend on for the cure of disease and the relief of symptoms, they will never do for their patients what they expect them to do. There are numerous therapeutic methods, and among them he mentioned hydrotherapy, massage, electrotherapy, suggestion, etc., which can be used in addition to drugs in properly selected cases. If there is a physiologic indication for iron, one can get its medicinal effects alone from the administration of Blaud's mass, properly and efficiently made. In these days too much attention is devoted to specialism, and not enough to the more important cardinal branches of the profession. Therapeutics is neglected in medical schools. Pharmacology is not taught as it should be, and unless a man knows something about pharmacy he can not fully appreciate therapeutics, and consequently he is a much easier victim for the nostrum houses.

DR. A. B. COOKE said that medical students and physicians are not willing to take the trouble to learn therapeutics, to study the action of drugs, hence they prescribe drugs in a haphazard way because of this lack of proper knowledge.

DR. W. C. HOLLOWAY emphasized the importance of not allowing men who are interested in the manufacture of drugs to become teachers of therapeutics; nor should physicians allow men who are interested in the sale of drugs to appear before medical societies and teach them how to use them.

DR. VIRGIL SIMPSON said that if physicians studied more the pharmacologic and physiologic action of drugs, it would increase their feeling of self-reliance, so far as the management of the conditions that present themselves at the bedside are concerned. If physicians knew more about drugs, they would feel less helpless when it comes to prescribe them, and the case would appear less hopeless than it seems.

DR. WILLIAM BAILEY believes that physicians should have a knowledge both of disease and the physiologic action of drugs, in order that they can prescribe intelligently. He finds in consultation work that practitioners give drugs to patients without knowing their exact formulas. He is inclined to limit himself to the strictly ethical, well-known drugs, and believes in having clear indications for their use.

DR. C. H. VAUGHT said that many physicians have been using proprietary medicines so long that they have forgotten the art of prescription writing and the doses of crude drugs, and it will require a long time to regulate a matter of so much importance to the profession. But that time is coming. Medical schools will pay more attention to materia medica and prescription writing. In the postgraduate courses that are now being organized and given in various parts of the country the ethical and reliable preparations would be taught.

(To be continued.)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-third Annual Meeting, held at Columbus, Ohio, Oct. 8-10, 1907.

(Continued from page 1468.)

What We Can Not Do with Purgatives.

DR. EDWIN WALKER, Evansville, Ind., said the action of purgatives is not well understood. Authorities vary widely as to how they affect the human organism. Practically all agree that they are irritants. Purgatives and infections of the alimentary canal present the same symptoms, namely, liquefaction of feces, increased albuminous exudate, the formation of gas and pain. The physician uses purgatives in chronic constipation when very few are in the least benefited and nearly all are made worse. In obstruction of the bowels, both acute and chronic, they do harm, besides the time lost often decides the fate of the patient. The routine practice of preceding every surgical operation with a purge is absurd. If the operation is not on the alimentary canal, there is little reason for giving it. If it is on the stomach or bowel, they do not render the condition more favorable, since they increase bacterial activity. Dr. Walker has operated on nearly one thousand cases in which the preliminary purge was omitted. The results were as good or better than when they were given. The patients were more comfortable, and suffered much less with tympany. Laxatives are rarely required after operation, as the bowels will move as soon as it is necessary. Patients do better without them. Purgatives are useful, but should not be given in a routine manner. They should only be given when there are clear indications.

Perineal Section for Obstruction of the Prostatic Urethra.

DR. CHARLES E. BARNETT, Fort Wayne, Ind., summed up the cause and effect of acute retention of urine. He considers catheterization more dangerous than operation. He believes that bladder drainage through a median perineal section is the operation of choice. Patients who are practically moribund recover following improved operative technic with a minimum quantity of anesthetic, oxygen inhalation postoperative, Fowler's position, aspiration irrigation with large drainage tubes, and out-of-bed posture second day. Simplicity, but thoroughness, in the postoperative treatment is the desideratum. He reported several cases.

Early Diagnosis and Removal of Uterine Fibroids.

DR. A. D. WILLMOTH, Louisville, made a plea for the early removal of these growths. He expresses the opinion, based on the statistics at hand and his personal experience, that it is the duty of the surgeon to remove uterine fibroids as soon as they are diagnosed, unless some constitutional disease or diseases exist that make operative procedures inadvisable because of the risk involved, or where the surgeon has to deal with a young and childless woman who desires a child, or in those in whom the tumor is subperitoneal, small, and giving no trouble.

Treatment of Pus Tubes.

DR. JOHN E. CANNADAY, Hansford, W. Va., said that operative and non-operative treatment have their separate and distinct fields. The trend is toward that form of conservatism which really conserves. Extreme and overconservative measures are as much to be deprecated as early radical extirpation, late and often. Surgical sense, judgment, ability, skill and experience are needed, so that practically pus tubes should never be removed during an acute attack. Many cases will resolve and be restored to normal conditions by waiting. The author makes a clinical classification of cases as follows: Those that resolve early, those that are followed by obliterating and crippling adhesions, and finally those in which large collections of pus are encapsulated and become sterile. In the latter class the best operative results are given. If the operative field is

soiled with pus that is known not to be sterile, a vaginal drain should be inserted but not an abdominal drain, as the danger of wound hernia is too great. The author reported 100 cases in which laparotomy was resorted to for chronic pus tubes, with a mortality of 1 per cent.

Treatment of Inguinal Hernia in Children.

DR. FRANK B. WALKER, Detroit, said it is estimated that one-third of all hernias occur in children under 14 years of age. In a series of seven hundred observations reported recently by Corner it is noted that multiple hernias are far more frequent in children than in adults. Premature children are very liable to hernia at birth, and inguinal hernia is present on both sides more often than at full term. From observations it would appear that the causes of hernia formation are more operative in early years than in adult life. He believes it is good surgery to use conservative methods for hernias in children up to 5 years of age, and thinks the majority can be cured thereby; but for the following class of cases radical measures should be adopted: Strangulated hernia; irreducible hernia; hernia associated with hydrocele or undescended testis; hernia threatening strangulation; those which are uncontrolled or painful under truss treatment, and hernia in children over 5 years of age.

Postperitoneal Fibroid Tumors of the Uterus.

DR. RUFUS B. HALL, Cincinnati, reported cases and exhibited specimens. He has had a large number of postperitoneal tumors to remove. Some of the operations have been very complicated, while others have been comparatively simple. Some of these tumors are easily enucleated, even when large. By following the line of cleavage the surgeon is able to enucleate them without much difficulty. In others it often requires great courage and skill to successfully remove them. Some are so firmly attached to the blood vessels and ureters that to successfully remove them is practically impossible. Such a case occurred in the practice of Dr. I. S. Stone, in which he had the misfortune to lose his patient from hemorrhage before he was able to enucleate the tumor. In many of these cases the surgeon begins the operation under the impression that he is going to remove a fibromyoma of the uterus. The tumor may be the size of an adult head, filling the pelvis full and extending somewhat into the abdomen, or it may be very much larger. Even after the abdomen is opened and the tumor examined it is not possible from the condition present to differentiate between postperitoneal fibromyoma and sarcoma. The author has made the mistake in beginning to enucleate a tumor, believing he had a fibromyoma of the uterus, when in reality it proved to be a sarcoma.

Open Method of Treating Fractures.

DR. DUNCAN EVE, Nashville, Tenn., said that in all cases in which marked comminution of the fragments is present, and when reduction is impossible, in oblique and spiral fractures of the bones of the extremities, operation is justified. Many of the deformities, pseudarthrosis, and loss of function which follow fractures will thus in many cases be obviated. The unsightly deformities which so seriously destroy the usefulness of the part and predispose to refracture will be prevented. Fractures complicated by severe injury to adjacent structures urgently demand operation. Under this heading he included fractures in which pressure is brought to bear on neighboring viscera, nerves and blood vessels, fractures associated with dislocations, and fractures involving joints. By exposing the seat of fracture the accumulated excess of blood or effused serum can escape, and at the same time permit the removal of any soft tissues that may be between the ends of the bone. In a case of comminuted fracture the surgeon can remove loose fragments of bone which have become entirely separated from their periosteal covering. The technic, after obtaining thorough cleanliness, is to make an incision sufficiently large to enable the surgeon to deal effectually with the fragments. The author reported two interesting cases. Operation should be deferred, if feasible, until after the acute symptoms of the primary injury have subsided, namely, from four or five days to a week. Operative treatment should be adopted in compound fractures; also in cases of a crippled fellow limb, of physical or business demands, of deteriorating personal discomfort, and of prospective activity of a perplexing nature, the wisdom of operation can well be considered. He is opposed, however, to the policy and the practice of those surgeons who operate only because a bone is broken and irrespective of present dangers or the future benefits to the patient.

The Opsonic Treatment in Gonorrheal Arthritis.

DR. A. RAVOGLI, Cincinnati, reported two interesting cases in which excellent results were obtained by the injection of gonococcic vaccine.

The following papers were also read:

"The Differential Diagnosis of Duodenal Ulcer and Gallstones," by Dr. W. D. Haines, Cincinnati; "Operations on the Gall Bladder," by Dr. Alexander C. Wiener, Chicago; "Internal Rotation and Lacerations of the Perineum," by Dr. George B. Twitchell, Cincinnati; "Plastic Tubercular Peritonitis; Report of an Unusual Case," by Dr. Charles H. Parkes, Chicago; "Plastic Work on the Urethra; A New Operation," by Dr. G. Frank Lydston, Chicago; "Sterilized Hands by Total Absolute Abstinence the Only Factor in Perfect Success," by Dr. J. Henry Carstens, Detroit; "Retroveralon and Retroflexion of the Uterus, Causes, Consequences and Treatment," by Dr. Hanna M. Graham, Indianapolis; "Gonorrhea and Marriage," by Dr. T. M. Reade, Springfield, Ohio; "Fracture of the Patella, with Report of Six Cases," by Dr. Robert Carothers, Cincinnati; "Delayed Union in Fractures," by Dr. Charles Stoltz, South Bend, Ind.; "Torticollis, Some of Its Various Phases," by Dr. Reginald H. Sayre, New York City; "The Preparation and Post Operative Care of Surgical Cases," by Dr. L. G. Bowers, Dayton, Ohio; "The Surgical Treatment of Acute Intestinal Obstruction and Report of Cases," by Dr. W. A. Melick, Zanesville, Ohio; "Volvulus of the Entire Mesentery of the Small Intestine, with Report of a Case," by Dr. C. E. Briggs, Cleveland, Ohio; "The Sigmoidal Factor in Pelvic Diseases," by Dr. J. Rawson Pennington, Chicago; "Internal Strangulated Hernia," by Dr. E. M. Brown, Chicago.

(To be continued.)

Medicolegal

Reasons for and Against Allowing Physicians Extra Compensation as Expert Witnesses.

The Kansas City Court of Appeals says, in the case of Burnett vs. Freeman, that whether a physician could be allowed to charge for his services as a witness as an expert has been a question on which the courts have entertained widely divergent views. In Rogers on Expert Testimony, 425, it is said that the cases in this country are nearly balanced, and that the question is still an open one. It must be admitted that there is strong argument to support either view.

It is not far-fetched to suppose a physician or surgeon of such wide reputation for skill and ability that his services as a witness would be required to such an extent as to seriously cripple the practice of his profession for his own benefit. There are instances where a professional man has devoted his life to the free service of his fellows, but it has never yet been said that he could be compelled to do so. If it were known that the free services (save ordinary witness fee) of the most eminent professional men of the country could be compelled at the instance of any litigant, might he not be required to devote a great part, or all, of his time in attendance on courts or in giving his deposition, for the purpose of answering hypothetical questions on suppositional facts? It is sufficient to call for grave considerations when a rule is asked to be enforced which could lead to such results.

On the other hand, all must concede that the physician, surgeon, or lawyer is not entitled to any more consideration than an expert in any other calling. A farmer, a mechanic, a merchant, and he who follows most any avocation, may be qualified to testify as an expert in cases which call for the peculiar knowledge which he possesses, and which he has spent his time and money in acquiring. If either of these could demand compensation (more than an ordinary witness fee), the administration of the law would undergo a radical change. As illustrated in Ex parte Dement, 53 Ala., 394, there may be litigation concerning the sale, or contract for sale, of any commercial commodity. The contract could be proved by the parties, documents, or those acquainted with its terms, and yet it might, perhaps, be necessary to prove the value of such commodity in certain markets on a given day. Dealers in such commodities, entire strangers to the litigants, and wholly disinterested in their affairs, could be compelled to testify as to such value, though it involved a special knowledge gained in

the prosecution of their special calling. Like instances in great number could be given, all of which should be classed as expert knowledge gained at expense to the possessor, and out of which he obtains his living.

After consideration of the question in all its bearings, this court has arrived at the conclusion that a witness called to testify as an expert, whether as a physician or in any branch of knowledge, may be compelled to state his opinion on hypothetical or other questions involving his professional knowledge, without compensation other than the witness fee taxed to the ordinary witness. It is a duty he owes to the state in aid of its orderly existence, and in return for which he enjoys its protection and the administration of its laws in his behalf, not least of which would be the compulsion of other experts, whether they be the man who practices a profession, the artisan, the artist, the tradesman, or other person, to come to his aid when needed in litigation in which he might unfortunately be involved.

In England there was a statute (St. 5 Eliz., c. 9, § 12) providing a penalty against the witness "who, having not a lawful and reasonable lot or impediment to the contrary," fails to appear to testify in a cause after process served on him, "and having tendered unto him or them, according to his or their countenance or calling such reasonable sums of money for his or their costs and charges, as having regard to the distance of the places is necessary to be allowed in that behalf." It is possible that such statute has had its influence in the course of judicial decision, and has fostered distinctions that would otherwise not have obtained. Distinctions did exist at the date of that statute, and before and since its enactment, so that a witness in high social, official, or professional life was thought to require more for his expense in attendance on the court. These have largely disappeared, though we find that, as to the professions of law and medicine, they have remained with sufficient tenacity to influence claims for extra compensation from persons practicing those professions to this day.

So far as the matter of loss of time is concerned, there is no good reason why a physician or an attorney should be preferred to any other witness, and the law now very properly puts all on the same level. These considerations, while not affecting the question whether a physician is entitled to compensation on the ground of performing service for the party calling him, yet explain, to some extent, why it is that there has grown up an idea that an expert in medicine, surgery, or law should be entitled to compensation for stating his knowledge of those professions on the witness stand, when rarely a claim is made for the innumerable calls for expert evidence from other avocations.

It should be remembered that the duty the expert owes to the state, as a performance of citizenship, rather than a rendering of service to an individual, pertains to an obligation to give the court the benefit of the knowledge he has in store at the time he is called on. He can not be required to especially fit himself for lines of inquiry. He should not be expected to make examinations, perform professional service, and the like, for that is not the office of a witness. He could not be compelled to do that any more than an ordinary person, with no knowledge of the facts pertaining to a case, should be required to go and post himself so as to become a witness.

In this court's opinion, a contract would be valid to pay an expert witness for any service which the law does not compel him to do free of charge, as already pointed out. For all such service he is entitled to claim compensation; but an agreement to pay such expert (whether doctor or lawyer) for being a witness as to those matters which this court holds the law and his duty as a citizen require him to testify to, would be invalid. As already stated, he is in such respect on the same plane with any other witness, and the agreement would be without consideration, and it would be against public policy.

It was urged as one of the reasons why the plaintiff in this case was entitled to recover that he always charged extra for attendance as a witness in the line of his profession, and that the defendant knew that, and with such knowledge had him subpenaed. But the court thinks that such consideration should not afford any help to the plaintiff's case. The fact that he may have exacted compensation for attending court as a witness in other instances, which the law did not justify, should not legalize his claim.

Hypothetical Questions.

The Supreme Court of Kansas holds, in Order of United Commercial Travelers of America vs. Barnes, that hypothetical questions put to expert witnesses should be based on such facts only as the evidence tends to prove, and if, as to any material hypothesis, such question is without the support of evidence, it should be excluded. It may not be required that the question be based on conceded facts, nor that it embrace all the facts of which there is evidence; neither is technical accuracy required in the framing of the question, but no material exaggeration or perversion of facts assumed is permissible. Each party has a right to assume, so far as there is any justification in the evidence, that the facts will be found in accordance with his theory and against the theory of the opposite party, and is entitled to frame hypothetical questions in accordance with such assumption. The evidence and circumstances in different cases are so variant, and the danger of confusing rather than assisting a jury in arriving at the truth is so great in this class of evidence, that only general rules, as to permissible questions, should be prescribed. That justice may be subserved a wide discretion rests in the trial judge.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 19.

1 The Asymmetry of the Cycle of Life, Being "The End of the Thread." J. Beard, Edinburgh, Scotland.
2 *Ptosis of the Abdominal Viscera Surgically Considered. C. G. Cumston, Boston.
3 *Advanced Age as a Contraindication to Operation. O. C. Smith, Hartford, Conn.
4 *Correction of Faulty Fashions in Dress an Important Factor in the Treatment of Diseases of Women. W. E. Fitch, New York.
5 *The W. Gill Wylie Appendix Operation. J. H. Richards, New York.

2. **Visceral Ptosis.**—Cumston emphasizes the fact that, in addition to heredity alcoholism, syphilis, overwork, venereal excess, traumatism and other conditions to which ptosis is commonly attributed, there is another which is far more important and more general, namely, a badly defined disturbance of the nutrition, showing itself by particular condition of the fibrous tissue, allowing itself to become distended and to resist poorly constant fatigue and prolonged efforts. Ptosis not infrequently makes its appearance after some serious infection, such as typhoid. Labor contributes the largest share in the production of visceral ptosis. Surgical interference is only legitimate in those cases in which all other means have proved unsuccessful, or in which the patient's life is rendered miserable by the conditions. He describes his technic which includes union of the recti, with kangaroo tendon suture so as to cause overlapping, the resection of the excess of the anterior aponeurosis, a second layer of kangaroo tendon uniting this, and the removal of all redundant skin by an elliptical incision.

3. **Age and Operation.**—Smith considers the general dread concerning surgical operations and analyzes a series of 1,000 operations of his own in which he finds that he operated on 167 patients over 50 years of age, the average being 69 years, with 31 fatalities, or 18.61 per cent. He deduces the fact that in clean, non-malignant elective operations surgery in aged people carries but a slight mortality. The principal points to consider are the condition of the heart, the arteries, the lungs and kidneys, rather than the number of years the patient has lived. The potential age is a factor of importance. Aged people do not tolerate well the loss of blood or shock, and all the resources at our command to preserve circulation, prevent shock and avoid injury in the tissues should be used. Anesthesia should be by ether with the drop method, he states. Strychnin, adrenalin and aseptic conduct of the operation lessens shock.

4. **Fashions of Dress.**—Fitch's article is concerned largely with the corset and its effect on abdominal respiration in compressing the pelvic organs and in causing their displacement. Corsets constructed on proper principles are not open to these objections.

5. **Wylie Appendix Operation.**—Richards describes an operation for removal of the appendix which has been employed for the last five years, has never been published or performed by any save Dr. Wylie himself and the few to whom he has shown the operation. It is especially adapted, he asserts, to all chronic cases, all acute cases before rupture and all cases of open appendix. The advantages claimed are as follows: (1) Not a muscle fiber is cut. (2) There is no danger of hernia. (3) From a mechanical point of view it does not weaken the abdominal wall. (4) From an artistic point of view the scar left is with difficulty to be found. (5) The peritoneum is opened for only one inch.

New York Medical Journal.

October 19.

6 *Heredosyphilology. R. W. Taylor, New York.
7 John Rhoton, the Son, Conservative. J. E. Donley, Providence, R. I.
8 Biologic Chemistry, First Series (1-6). W. A. Taltavall, New York.
9 *Partial Résumé of the Prophylaxis of Tropical Disease. J. H. White, New Orleans.
10 *Aid to the Diagnosis of Tuberculosis in Infancy and Childhood. L. Fischer, New York.
11 Plastic Operations. J. E. Johnson, Memphis, Tenn.
12 Localization of Foreign Bodies in the Eye with the X-Ray, with Description of New Apparatus. W. I. LeFevre, Cleveland, Ohio.
13 *Differential Diagnosis Between Chronic and Recently Acquired Hernias From a Medicolegal Standpoint. H. J. Butte, Philadelphia.

6. Abstracted in THE JOURNAL, Oct. 12, 1907, p. 1306.

9. **Prophylaxis in Tropical Diseases.**—White declares that absolute segregation and strict quarantine laws are the only measures for leprosy. In plague, personal cleanliness and freedom from abrasion of the lower extremities are important prophylactic measures. Absolutely safe quarantine is impossible. Thirty days out from a plague port with no suspicious happening suggests non-infection of a ship. If a case has occurred, fumigation with 4 per cent. sulphur dioxid gas for twelve hours is required to destroy infection. On land, rooms should be washed down with 1-1000 bichlorid of mercury solution, followed by sulphur fumigation and then with whitewash and full free ventilation and sunning. As to yellow fever, seeing the peculiar natural disadvantages from the standpoint of yellow fever elimination offered by many southern cities, especially New Orleans, all parts of a vessel must be fumigated with 1 per cent. sulphur just before it sails from a suspected tropical port. If illness breaks out on board, the vessel is fumigated in quarantine. The personnel of all ships from all tropical ports should be kept under observation for six full days. The author recapitulates in detail the procedure in face of an epidemic. The stegomyia only travels when it gets by accident into a car, box or drawer instead of a house. The infected stegomyia remains as nearly as may be at the place where it first tasted blood and will not voluntarily leave a house, much less cross a street. The reduction of humidity, which favors rank luxuriance of vegetables, by drainage, sewerage and paving and the production of a suitable water supply, are the all essential sanitary measures.

10. **Tuberculosis.**—Fischer describes von Pirquet's method of testing for latent tuberculosis in use at St. Ann's Hospital for Children in Vienna. The technic practiced by v. Pirquet is as follows: One part of tuberculin is diluted with one part of a 5 per cent. solution of carbolized glycerin and two parts of a physiologic salt solution. Of this solution, two drops are inoculated by means of a platinum needle in two injections, and a third place is scarified without inoculation as a control. It is advisable to leave the tuberculin solution on the inoculated areas for several minutes to permit absorption to take place. Another dilution which may be used is tuberculin, one part, and normal salt solution, three parts. This mixture yields a brownish liquid from which one or two drops are used for inoculation. In case of tuberculosis, excluding the last stages of miliary tuberculosis and tuberculous meningitis, in which the system is so transformed as to be tolerant of tuberculin, a papule appears in from 24 to 48 hours. Cases of bone and joint tuberculosis showed intense reaction.

13. **Hernia.**—Butte gives the following tabular summary of the more important diagnostic points between recently acquired and chronic hernias:

RECENTLY ACQUIRED HERNIA.	CHRONIC HERNIA.
Hernia is cone-shaped, base points inward, apex outward.	Hernia apex inward, base globular and pointing outward.
Sac shows good muscular tone.	Sac relaxed, flabby, and later is puckered.
Absence of pigmentation.	Presence of pigmentation, due to separation of the muscular fibers of the sac and resulting in venous stasis in the superficial veins.
Ring is small, thin, and has uneven edges.	Ring is large, its edges thickened and smooth, due to friction (in and out movements of the viscus).
No signs of adhesions.	Thickening (adhesions) may be present, due to omental hypertrophy above and below the ring.
As a rule rather difficult to reduce, but returns easily.	Reducible spontaneously and returns easily on account of large ring unless adhesions exist.
Presence of acute inflammatory signs (heat, redness, soreness, etc.), due to the injured peritoneum, together with torn muscle fibers.	The only source of inflammation is due to irritation or inflammation of previously formed adhesions.
The inguinal canal is normal in outline.	The inguinal canal is displaced.
Absence of truss marks.	Truss marks may be present.
Proper fitting truss should always hold hernia in place.	Best fitting truss may not be able to hold the hernia up.
Pubic hairs are not disturbed, as no truss has ever been worn.	Pubic hairs are worn off and curled up, the result of mechanical pressure if the truss has been worn for any length of time.
Patient shows constitutional disturbances, as nausea, perhaps vomiting, the result of shock.	No constitutional disturbances, unless strangulation, etc.

Boston Medical and Surgical Journal.

October 17.

14 *Dermatologic Research: President's Address, Sixth International Dermatological Congress. J. C. White, Boston.
15 *The Prostate from the Surgical Standpoint. C. S. Benson, Haverhill, Mass.
16 *Treatment of Simple Infections of the Staphylococcus Aureus with the Vaccines of Wright. H. F. Hartwell and R. Lee, Boston.
17 A Case of Rabies. C. F. Withington, Boston, Mass.
18 Personal Experiences in Abdominal Surgery. A. C. Heffenger, Portsmouth, N. H.
19 Justifiable Homicide. C. G. Cumston, Boston.

14. **Dermatologic Research.**—White, in the course of his presidential address, indicated to the International Dermatological Congress the following important questions for research:

1. What are the influences of race, geographical conditions, climate, national customs, etc., on the evolution and type of diseases of the skin?
2. What variations does emigration induce in dermatoses?
3. What cutaneous affections should national governments regard as infective, and seek to control by restriction of immigration, by enforced insulation, and similar measures?
4. How far is it practicable and incumbent on national governments to control the continuance and prevalence of hereditary dermatoses by restriction on marriage laws?
5. Should not the influence of this body be directed to induce governments to aid in the support of researches bearing on sanitary questions of national importance?

15. **The Prostate.**—Benson considers that, once the diagnosis of prostatic hypertrophy is unqualified and established, the sooner we operate the better. In cases, however, in which the urine has been long dammed back and the bladder is atonic, operation should be undertaken only when there is danger of death. Operation is questionable also when there is already infection of the bladder and kidney. Any operation that takes more than a few minutes to perform will put the patient on the wrong side of the mortality statistics. The indications are not merely frequent, nocturnal micturition, but difficulty in starting and stopping the stream, and the presence of residual urine. A condition in which there is a certain amount of irritation and congestion of the gland without any increase in glandular and connective tissue elements is the only justification for seeking any other method than catheter life or operation. Such a condition depends on an old gonorrhea. Benson uses massage of the prostate in those cases, with instillation of only a few drops of silver nitrate in the membranous and prostatic urethra. Irrigation of the bladder is rarely, perhaps never, called for. In regard to operation he states that the Bottini is useful only under very strict

limitations. The choice between the suprapubic and perineal operations must be guided by circumstances. The so-called combined operation is more than useless. It is important to differentiate hypertrophy from cancer. Operation for cancer is entirely contraindicated save when the growth is entirely confined within the gland capsule. Hypertrophy must also be distinguished from a subacute congestive condition, primary pyelonephritis, prostatic abscess, cysts, primary tuberculosis and gonorrheal prostatitis.

16. **Staphylococcus Aureus Infections.**—Hartwell and Lee conclude their observations as follows:

1. Treatment with vaccines is the most effectual treatment for boils and carbuncles.
2. Although the vaccine treatment does not prevent recurrence, cases of chronic furunculosis can be absolutely controlled by occasional inoculations.
3. Vaccine treatment is a valuable surgical adjunct in appropriate cases.
4. The treatment of this class of cases can be successfully carried out without the estimation of the opsonic index and without any special technical training.

Lancet-Clinic, Cincinnati.

October 19.

20 Relations Between the Medical Profession and the People. H. H. Grant, Louisville, Ky.
21 Common Origin and Nature of Blind Spells, Petit-Mal, Faintings, Swoonings, Coma, Pseudo-Epilepsy, Epilepsy, Migraine, etc. G. M. Gould, Philadelphia, Pa.
22 Clinical Observations in Intracranial Complications of Otitic Origin. J. A. Stucky, Lexington, Ky.

Pennsylvania Medical Record, Athens, Pa.

September.

23 Vestiges and Visions. C. McIntire, Easton.
24 Premature Detachment of the Placenta. O. J. Kregar, Monessen.
25 Psychic Remedies and the Irregulars. M. J. Sweeney, Kane.
26 *Splitting of the Larynx for the Removal of Growths. J. K. Sterrett, Pittsburg.
27 Retinal Asthenopia. J. E. Willetts, Pittsburg.
28 *The Present Status of Preliminary Iridectomy as Related to Cataract Extraction. W. Reber, Philadelphia.
29 *Latent Diphtheria, a Public Health Problem. M. Solis Cohen, Philadelphia.
30 *Nature of Herpes Simplex, with a Consideration of Its Diagnostic and Prognostic Significance in Various Infectious Diseases. J. F. Schamberg, Philadelphia.

26. **Splitting of the Larynx.**—Sterrett urges splitting of the larynx when a growth or foreign body is to be removed instead of nibbling away with the help of the laryngoscopic mirror. He calls attention to the great advantages that have resulted since the substitution of entering the tympanic cavity behind the ear instead of draining it through the external meatus. Incision into the larynx must be exactly in the median line and of ample length. When the cartilage is reached all bleeding is arrested and then the thyroid cartilage is divided, care being taken to do this exactly in the central line to avoid injuring the vocal cords. If bleeding now interferes with the operator a sterile solution of adrenalin should be sprayed into or applied to the larynx by means of a swab. It is also necessary to use cocain at this point. The cricoid cartilage may be divided if necessary. The operator can then have a full view of his field and go ahead and remove whatever tissues he sees fit. The cartilages are closed by means of sutures and the skin wound is closed later.

28. Abstracted in THE JOURNAL, Oct. 6, 1905, page 1130.

29. This article appeared in THE JOURNAL, July 6, 1907, p. 30.

30. Abstracted in THE JOURNAL, Oct. 20, 1906, p. 1322.

Surgery, Gynecology and Obstetrics, Chicago, Ill.

September.

31 *Histologic and Clinical Significance of Malignant Chorioepithelioma. G. Schmauch, Chicago.
32 *Pleural Fistula. R. M. Parker, Chicago.
33 *Postoperative Thrombophlebitis. W. H. Morley, Ann Arbor, Mich.
34 *Reconstructive Endoaneurismorrhaphy. W. J. Frick, Kansas City, Mo.
35 An Anomaly of the Celiac Axis. C. H. McKenna, Chicago.
36 Pathology of New Growths of the Bladder. F. S. Mandelbaum, New York.
37 Case of Tumor of the Carotid Body. J. E. Cook, St. Louis.
38 *Gangrene and Eclampsia. C. B. Reed, Chicago.
39 *Resection of the Liver. Professor Garré, Breslau, Germany.
40 *New Obstetric Forceps. F. L. Good, Boston.
41 Simple Method of Removing Stones from the Lower Ureter. W. Bartlett, St. Louis.
42 Technic of Draining Circumscribed Abscesses of the Pancreas. G. E. Brewer, New York.
43 Empyema. A. T. Mann, Minneapolis.
44 Biliary Obstruction from Calculi in the Common Duct. H. O. Marcy, Boston.
45 Some of the Factors that Influence Mortality in Operative Surgery. J. D. Singley, Pittsburg.

31. **Malignant Chorioepithelioma.**—Schmauch, in a review of 206 cases of malignant chorioepithelioma, discusses at some length the nature and etiology of these growths, including a new classification of chorioepithelial proliferations. He describes the relations between common and destructive mole and common and destructive placentary polyp, which are localized growths, and malignant chorioepithelioma, which is a generalized growth. He emphasizes the necessity for differentiation between maternal and fetal cells, and states that it is essential for the prognostic valuation of chorioepithelial proliferations. He discusses fully the clinical points of differentiation between malignant generalized and harmless localized chorioepithelial growths, and refers to reported cases of spontaneous recovery from chorioepithelioma in which incomplete operation had been performed. He gives the indications for operative interference. The article is a very exhaustive one.

32. **Pleural Fistula.**—Parker quotes Quint's definition of pleural fistula as "direct communication of the lung parenchyma or of a bronchus with the external air through the chest wall." He is surprised at the dearth of literature on the subject and reviews hitherto reported cases, adding one of his own. The condition is caused by perforation outward of a suppurating lung process or by extension of a suppurating process in the chest wall. The diagnosis is made by the physical findings. A constant symptom is the discharge which is characterized only when mixed with air. The unfavorable course of pleural fistulas without treatment justifies the severe surgical measures usually necessary to close them. The actual cautery is the simplest means of affecting a cure; it is applicable only in recent cases uncomplicated by a cavity or considerable induration. A suppurative cavity will require resection of a rib. It may be possible to mobilize the lung by separating the adhesions between costal and visceral pleurae. It is often necessary to remove the lining of the abscesses when a large bronchus opens into the fistula; removal of several of the cartilage rings to allow collapse and obliteration is also necessary. When all the measures necessary to obliterate the cavity have been used, the opening of the fistula on the lung surface is closed by suturing. The author reports the results of his experiments on dogs.

33. **Postoperative Thrombophlebitis.**—Morley, as a result of the review of the literature, arrives at the conclusion that the cause of this complication has yet to be discovered. Every author has his own theory. That changes in the blood in the vessel wall, trauma of the vein, arterial sepsis or rough retraction of the abdominal wall, either singly or together, can cause this complication he considers untenable. He analyzes eleven cases of postoperative thrombophlebitis occurring in 1,756 laparotomies and plastic operations in the gynecology service of the Michigan University Hospital, and, in addition to the point already stated, concludes that complications can follow almost any operation; that emboli of the lungs are often coincident with thrombosis; that the period of incubation is from the ninth to the twentieth day; that the left side is more often affected; that the mortality is practically *nil*, and that symptoms disappear very slowly and in many cases are more or less always present.

34. **Reconstructive Endoaneurismorrhaphy.**—Frick reports a successful case of reconstructive endoaneurismorrhaphy of popliteal aneurism. The result is said to be ideal. A noteworthy feature is the successful attempt to retain at the same time the patency of the diseased vessel. A peculiar point is the absence of the posterior tibial pulse, observed after operation.

38. **Gangrene and Eclampsia.**—Reed reports four curious and important cases in which the application of hot bottles, etc., during puerperal eclampsia was followed by a destruction of tissue at the spots where artificial heat had been applied and also at other places where pressure was exercised by one part of the body on another. In one case the patient lay with the left hand under her back, and in another case gangrene oc-

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curred on the heel of one foot which was crossing the front of the ankle of another. The resemblance of these cases to burns makes them of considerable medicolegal interest. That they were not burns, however, is probable from several reasons: (1) In every case the warmth was carefully tested on the persons of the attendants. (2) The difference between a normal temperature and that of the application was not sufficient to cause the injury. (3) There was not a correspondence between the character of the injury and the pathology of a burn in as much as in the case in point, the most intense injury instead of being at the point of contact was deep below the surface. Only a transient hyperemia followed the removal of hot applications and then the process went on, constituting a sequence of clinical symptoms never seen after a burn of any degree, so that the heat alone could not be responsible for the condition. That it was not due solely to pressure is suggested by the fact that the flesh at the point of contact at the bed was not affected, but only where the pressure was between two parts of the body. From this Reed concludes that pressure and heat must be associated with a third something which the patient herself furnishes, and suggests that the solution lies in the presence of a chemical irritant in the blood itself that so alters the character of that fluid as to cause the tissues to break down in the presence of a determining factor. He mentions the analogy of diabetics in which slight inflammations may lead to diabetic gangrene, and states that it is highly probable that a chemical irritant with approximately the same formula might be found circulating in the blood of the diabetic and of the eclamptic. He suggests acetones or diacetic acid and refers to Stolz's demonstration, that there is an increased acetonuria during labor, especially in the primipara, which is greatly intensified during the first three days of the puerperium.

59. **Resection of the Liver.**—Garré reports five cases. The records of each of these contain sufficient proof of the fact that extensive resections of the liver can be carried out with the most simple means. If the surgeon is careful not to stretch the vessels in cutting through the liver and not to pull them out, it is not difficult to apply hemostatic forceps and to apply a ligature, while the vessels which are cut obliquely have to be taken care of by circular suture. Compression suture of the wound in the liver and catgut suture of the surface are the safest means of hemostasis. It is best to press together two wounded surfaces of the liver by suture, and, therefore, it is always best, whenever possible, to make the resection in the shape of a wedge placed in an approximately vertical direction to the margin of the liver.

40. This article also appeared in the *Boston Medical and Surgical Journal*, March 21, 1907.

Archives of Ophthalmology, New York.

September.

46 *Treatment of Ocular Tuberculosis with Tuberculin TR. E. Török, New York.
47 Experiences with Koch's Tuberculin. D. Bruckner, Würzburg.
48 Origin of Iris and Anterior Chamber Cysts. E. Woelfflin, Basle.
49 Etiology of Lamellar Cataract. J. Dunn, Richmond, Va.
50 Congenital Dacryocystitis. G. Hirsch, Halberstadt.
51 *Treatment of Acute Incarceration of the Iris. J. Dunn, Richmond, Va.
52 Is Miner's Nystagmus of Labyrinthine Origin? Prof. A. Peters, Rostock.
53 Calcareous Opacity of the Cornea and a Method of Making It Transparent. Guillery, Cologne.
54 Clinical Observations Regarding Jequiritol and Jequiritol Serum. O. Saalfner, Würzburg.
55 Iritis in an Infant. Professor Hoppe, Cologne.

46. **Tuberculin TR in Ocular Tuberculosis.**—Török reports results of his observations in the injection of tuberculin in ocular tuberculosis in the eye clinic of the Royal Hungarian University of Science at Budapest since the spring of 1905. He reports sixteen cases of eye tuberculosis treated in this manner as follows: Eight cases of tuberculosis of the sclera, 5 tuberculosis of the conjunctiva, 2 tuberculous iritis and 1 tuberculous chorioiditis. Of these, 5 patients with tuberculous scleritis, 1 with tuberculous iritis and 2 with tuberculous conjunctivitis, or eight in all, were entirely cured. Marked improvements resulted in two cases of tuberculous scleritis and two cases of tuberculous conjunctivitis, the treatment had no effect in two cases, one of tuberculous conjunctivitis and one of tuberculous iritis.

51. **Acute Incarceration of the Iris.**—Dunn's case shows the value of a large peripheral section done in a part of the cornea distant from the point of injury in preventing the reincarceration of the eye, and teaches that in some cases it is safe to wait until the anterior chamber has become re-established before attempting to pull out the prolapse. The attempt should be made, however, immediately on the re-establishment of the chamber. Such a section might be of value in case of those slow, perforating circumcorneal ulcers seen most frequently among the negroes.

The American Journal of Urology, New York.

September.

56 *Value of Palliative Operations for Cancer of Bladder. H. Cabot, Boston.
57 A New Instrument Designed to Measure the Thickness of the Prostate. G. Walker, Baltimore.
58 Simple and Inexpensive Compression Cylinder for Radiographing Kidney Stones. J. R. Wathen, Louisville, Ky.

56. **Cancer of Bladder.**—Cabot considers that palliative operation may be found in two classes of cases: (1) Those in which it can be undertaken easily before infection has taken place or become important, and in which there is, therefore, the possibility of actually prolonging life; (2) those undertaken after infection has occurred and which must be regarded as purely for relief of symptoms. He discusses each class and reports a series of fourteen cases. He describes the technic and arrives at the following conclusions: (1) Palliative operations are of value in the treatment of cancer of bladder. (2) In properly selected cases, operation will prolong comfortable existence very materially. (3) Suprapubic drainage of the bladder will relieve the symptoms and promote the comfort of patients for whom nothing very radical can be done. (4) Hemorrhage should not be allowed to continue unchecked unless efficient examination has conclusively shown that its cause can be removed by operation.

Bulletin of the Lying-in Hospital, New York, N. Y.

June.

59 *Unusual Malformation of Cranial Bones in a New-Born Infant. J. W. Markoe, New York.
60 Clinical Pathology in Pregnancy as an Aid to the Clinician. F. E. Sondern, New York.
61 Improvements in Operating Room Construction at the Lying-in Hospital and in Ingenious Method of Securing Additional Floor Space. R. McPherson, New York.
62 Craniotomy. E. S. Gushee, New York.

59. **Antenatal Perforation of Cranial Bones.**—Markoe describes cases of multiple perforation of the cranial bones in new-born infants. Two descriptive plates accompany the article.

The Journal of the Michigan State Medical Society, Detroit.

September.

63 *Disseminated Peripheral Nerve Irritation and Nervous Exhaustion. T. Klingmann, Ann Arbor.
64 Remarks on Diagnosis of Twisted Pedicle of Pelvic Tumors. H. F. Lewis, Chicago.
65 *Practical Suggestions for Limitation of Puerperal Infection. J. E. Davis, Detroit.
66 *Diagnostic Importance of Blood in the Stools. L. J. Hirschman, Detroit.
67 *Is the Obstetrician Properly Caring for and Being Cared for in Obstetric Practice? A. N. Collins, Detroit.

63. **Disseminated Peripheral Nerve Irritation.**—Klingmann considers that no terms are more frequently misused than neuritis and neurasthenia. He goes into detail in the distinction between them, and, taking 350 consecutive cases of general nerve irritability in which the preliminary diagnosis of neurasthenia or neuritis was made, he groups them as follows: (1) Those patients suffering from a combination of mental and physical weakness and irritability, general hypersensitiveness and a reduction of all forms of nervous energy which tend to persist indefinitely and do not yield readily and relapse frequently. (2) Cases in which a combination of abnormal motor, sensory and trophic phenomena exist in consequence of morbid changes in the peripheral nerve trunks. (3) A class of patients with definite and constant subjective symptoms depending on a localized peripheral nerve irritation resulting in nervous exhaustion which yields readily to treatment. Of the 350 cases, 73 belong to the first division, 38 to the second

and 238 to the third. He describes 4 typical cases of the last class. Much harm, he considers, is done by the indiscriminating use of certain general therapeutic agents, such as electricity, and holds that attention should first be given to symptoms and pathologic conditions as a basis for treatment. Autotoxemia must not be forgotten.

65. Abstracted in THE JOURNAL, July, 1907, p. 180.

66. Abstracted in THE JOURNAL, July, 1907, p. 181.

67. **The Obstetrician.**—After a consideration of the proper care that should be exercised in his management of parturient cases, Collins proceeds to the question of the remuneration of the obstetrician. He states that no branch of medical service is so inadequately remunerative, taking physicians collectively. He points out that a patient who will make no exception to a fee of $100 for the removal of an appendix or a hernia operation objects to paying a reasonable fee in a confinement. It is impossible to tell whether six or sixty visits will be required, or what complications may occur in the course of the operation itself. If the patient requires much service and many visits, or if the responsibility is great, the physician should charge accordingly.

Wyandotte County (Kan.) Medical Jounal, Kansas City.

October.

68 *Interpretation of Laboratory Findings. O. P. Davis, Topeka, Kan.
69 *Syphilis of the Upper Air Passages. J. E. Sawtell, Kansas City, Kan.
70 *Obstetric Hemorrhage. R. B. Stewart, Topeka, Kan.

68. **Laboratory Findings.**—Davis argues that it is a poor pathologist who gets his knowledge in the great field of laboratory medicine by proxy. He must dig it out for himself. It is a poor mathematician who works out the original problems with the aid of a key; the "mental muscles" become flabby by such coddling. It is not enough to consign certain investigations of tissue, secretion or discharge, to some self-constituted expert in such work. The physician ought to do these things himself if not for the sake of the patients, at any rate for his own sake. He will thus develop the power of keen thinking and acquire the educated sense that will serve him well in later and more abstruse problems. He will be better able to correlate the laboratory with the clinical findings and become a better clinician in the process. The influence of the physician will steadily diminish if he does not become scientific.

69. **Syphilis of the Air Passages.**—Sawtell, in discussing laryngeal syphilis, says that the belief that laryngeal gummas generally begin to ulcerate and break down within a remarkably short time after they form and are consequently rarely seen is not in accord with his experience. He reports an interesting case.

70. **Obstetric Hemorrhage.**—Stewart considers the most efficacious methods in the treatment of postpartum hemorrhage to be massage of uterus and hot vaginal douches of weak antiseptic or normal salt solution. If the hemorrhage continues, a hot intrauterine douche of a 2 per cent. solution of acetic acid should be at hand and immediately applied. In an emergency a cut lemon may be introduced into the uterus by the hand and there squeezed.

Long Island Medical Journal, New York.

October.

71 *Value of the Opsonic Index in Treatment of Bacterial Infection. C. E. Bolduan, New York.
72 *Blastomycetial Dermatitis; with Report of a Case. N. P. Rathburn, Brooklyn.
73 Instructions to those Having Gonorrhea. V. C. Pederson, New York.
74 *Cystocele-Rectocele-Procidentia. W. B. Chase, Brooklyn.
75 *Plastic Surgery of the Vagina. C. Jewett, Brooklyn.

71. **Opsonic Index.**—Bolduan states that, measured in accordance with Wright's technic, one finds considerable variation in the opsonic power of serum from a number of apparently normal individuals. In estimating the opsonic power the counting of only 50 leucocytes is insufficient. Good readings may, however, be obtained from 150 leucocytes. For reasons not yet understood, duplicate and triplicate tests made on the same serum, at the same time, and under apparently identical conditions, often yield widely divergent results. Clinical results with bacterial inoculations do not always parallel the opsonic indices. Patients will do well with decreased opsonic index, and *vice versa*.

72. **Blastomycelial Dermatitis.**—Rathburn says that the only lesson that he has learned during five years' experience with the case reported is that the best treatment is prompt and thorough removal of the lesions as they appear, with moist antiseptic dressings for the resulting wounds.

74. **Cystocele-Rectocele-Procidentia.**—Chase says that the relative degree of displacements of bladder and the rectal wall varies. In one, cystocele is most pronounced, in others the rectocele, and in the third class the uterine procidentia. He deals only in cases in which all three conditions are present. If cystocele is present it should be overcome by appropriate treatment. In the case of a woman not past the menopause and liable to impregnation, the operator must consider in individual cases whether he is justified in removing the ovaries or in resecting a portion of the Fallopian tubes to prevent conception. Chase hesitates to adopt this procedure of fastening the bladder to abdominal walls, fearing a vesical tenesmus, such as follows vaginal hysterectomy, when the bladder has been injured. Care must be taken not to promise to patients too much.

75. **Surgery of the Vagina.**—Jewett reports his methods of dealing with cystocele, rectocele and uterine prolapse.

The Journal of the New Mexico Medical Society, Albuquerque.

September.

76 Orthostatic Albuminuria and Its Relation to Tuberculosis. F. T. B. Fest, Las Vegas.
77 Scarlatinal Sore Throat. T. C. Sexton, Las Cruces.
78 Case of Primary Tuberculosis of Cecum and Appendix. B. F. Stevens, El Paso, Texas.

Archives of Otology, New York.

October.

79 Acute Labyrinthitis Due to Meningitis (?). M. Yearsley.
80 Surgical Exposure of the Jugular Bulb. Dr. Voss, Berlin.
81 Criticism of Dr. Voss's Article on Surgical Exposure of the Jugular Bulb. Professor Grunert, Halle, Germany.
82 Vertigo and Disturbance of Equilibrium in Non-Suppurative Diseases of the Internal Ear. Wittmaack, Greifswald, Germany.
83 Chronic Progressive Labyrinthine Deafness. Paul Manasse, Strassburg.

New Orleans Medical and Surgical Journal.

September.

84 Round Ligament Suspension for Retrodisplacements of the Uterus. C. J. Miller, New Orleans.
85 Prevention of Tuberculosis. R. G. Ducote, Bordelonville, La.
86 Factors in Disease. J. Burke, Manitowoc, Wis.
87 Splint Bandage for Fractures of Humerus. J. D. Bloom, New Orleans.
88 Syphilis: Symptomatology, Hygiene and Treatment by the Inunction Method. L. G. Lebeuf, New Orleans.
89 Guaiacol in Pneumonia and Allied Conditions in Children. J. L. Scales, Alden Bridge, La.

Progressive Medicine, Philadelphia.

September.

90 Diseases of Thorax and Its Viscera, Including the Heart, Lungs and Blood Vessels. W. Ewart.
91 Dermatology and Syphilis. W. S. Gotthelf, New York.
92 Obstetrics. E. P. Davis, Philadelphia.
93 Diseases of the Nervous System. W. G. Spiller, Philadelphia.

Journal of the Outdoor Life, Trudeau, Saranac Lake, N. Y.

October.

94 Nursing in Tuberculosis. C. Hatfield, Philadelphia.
95 The Winter Cure. H. F. Stoll, Hartford, Conn.
96 The Mental Attitude of Enormous Importance in Cure of Tuberculosis. H. Sewall, Denver, Colo.
97 Pittsburg vs. Tuberculosis: Splendid Progress Shown in Its Fight Against the Disease. W. C. White, Pittsburg, Pa.
98 Prof. Joseph J. Grancher of Paris: The Life Story of a Distinguished Physician, 1843-1907. S. A. Knopf, New York.

Medical Library and Historical Journal, Brooklyn, N. Y.

June.

99 Doctors of Samuel Johnson and His Court. J. P. Warbasse, Brooklyn.
100 Pasteur: A Study and Appreciation of His Career from a Layman's Standpoint. Rev. W. M. Brundage, Brooklyn.
101 Early Medical Libraries in America: Being an Account of the Origin and Growth of the Libraries of the Pennsylvania Hospital and of the College of Physicians of Philadelphia. F. R. Packard, Philadelphia.
102 How Much is the Library Appreciated? C. P. Fisher, Philadelphia.
103 The Association of Medical Librarians, Past, Present and Future. A. T. Huntington, Brooklyn.

The Journal of Cutaneous Diseases, New York.

September.

104 Lichen Obtusus Corneus—an Unusual Type of Lichenification. C. J. White, Boston.
105 Case of Systemic Blastomycosis, Including Autopsy and Successful Animal Inoculations. F. H. Montgomery, Chicago.
106 Treatment of Pigmented Hairy Nevi with Liquid Air; Three Additional Case Reports. W. R. Trimble, New York.
107 Case of Acrodermatitis Chronica Atrophicans with Coexisting Scleroderma. J. Kingsbury, New York.

The Columbus Medical Journal.

September.

108 Address: President of General Practitioner's Society, Columbus. G. M. Clouse, Columbus.
109 Bathing a Factor in Care and Preservation of the Skin. C. C. Miller, Chicago.
110 Infection of Steno's Duct. W. C. Abbott, Chicago.
111 Variation and Heredity. L. B. Santee, Marlboro, Ohio.
112 Chronic Rheumatism. H. M. Postle, Columbus.

The Montreal Medical Journal, Montreal.

September.

113 Phases of a Failing Circulation. A. D. Blackader, Montreal.
114 Case of Typhoid Fever: Death Before Ulceration. P. G. White, Montreal.
115 Serum Sickness. C. P. Howard.
116 Sudden Death Following Serum Inoculations. Oskar Klotz.
117 General Peritonitis. E. Archibald, Montreal, and A. Cumming, Montreal.
118 Case of Middle Meningeal Hemorrhage, with Operation and Recovery. J. Guy W. Johnson, Campas, Mexico.

Illinois Medical Journal, Springfield.

September.

119 What Constitutes Negligence? C. D. Pence, Chicago.
120 Degree of Skill Required of a Physician. C. W. Hall, Kewanee, Ill.
121 Legal Status of the Doctor's Fee; What He Should Do when the Patient Is Dissatisfied and when the Patient Sues for Malpractice. R. Griffith, Springfield.
122 *Sewage Disposal—The Septic Tank. E. F. Baker, Jacksonville, Ill.
123 Hospital Abuses and the Remedy. G. T. Palmer, Springfield.
124 *Relations of the Teaching of Clinical Obstetrics to the Problem of Medical Charities. C. S. Bacon, Chicago.
125 Dispensary Abuse. T. H. Benn, Chicago.
126 Serum Disease. H. W. Cheney, Chicago.
127 Surgery of the Kidney. H. M. Ritchey, Chicago.
128 Suppurating Wounds Following Abdominal Section. T. J. Watkins, Chicago.
129 Anatomy of the Subphrenic Space, with Exhibition of Anatomic Specimens. H. O. White, Chicago.

122. Abstracted in THE JOURNAL, June 22, 1907, p. 2150.

124. This article appeared in the *Chicago Medical Recorder*, August, 1907, and was abstracted in THE JOURNAL, Sept. 21, 1907, p. 1056.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

Oct. 5, 1907.

1 Medicine and Its Specialties in Relation to the State. C. S. Tomes.
2 *Limited Value of Diphtheria Antitoxin as a Prophylactic. O. H. Peters.
3 *Two Cases of Hereditary Dystrophy. W. Ogilvie and P. G. Easton.
4 *Bacteriology and Treatment of Yaws (Frambesia Tropica). A. Robertson.
5 *Relative Value of Inhalation and Injection Methods of Inducing Anesthesia. H. P. Leale.
6 *The Indications for Cholecystectomy. J. Bland Sutton.
7 *Lesions of the Sigmoid Flexure as a Cause of Colitis. P. L. Mummery.
8 Case of Sarcoma of the Small Intestine. L. G. Anderson.
9 *Indications for Prostatectomy. J. Pardoe.
10 *Further Series of Cases of Total Enucleation of the Enlarged Prostate. P. J. Freyer.
11 *Successful Resection of Nine and a Half Feet of Small Intestine for Gangrene. C. P. Childe.
12 Intestinal Obstruction. W. Taylor.
13 *Direction of Abdominal Incisions. A. E. Maylard.
14 *Mobile Kidney, with a Description of a New Operation for its Treatment. E. S. Bishop.
15 *A New Operation for the Complete Removal of Hemorrhoids. A. H. Vernon.
16 Hygroma Colli and Branchial Fistula. G. H. Edgington.
17 Appendicectomy in which the Appendix was Quite Separate from the Cecum. J. T. Williams.
18 *Bone Grafting and Regeneration. H. V. Drew.
19 Diphtheria of the Glans Penis Following Circumcision. R. O'Brien.

2. **Diphtheria Antitoxin as a Prophylactic.**—Peters says that though it can not be denied that a certain prophylactic value has been established there has possibly been a tendency to go to the extreme in estimating the benefits and in pushing the application of this remedy. He gives in detail the contrast presented by the methods used in two outbreaks of diphtheria at Nottingham during 1906. The first outbreak was at the General Hospital. To each of 136 individuals exposed to infection were given 500 units of unconcentrated serum, the subjects being then examined bacteriologically and their throats swabbed. Out of the 136, 21 harbored the bacilli and were all promptly isolated. In spite of the antitoxin 7 developed the disease. The second outbreak occurred among school children; the throats of 2,000 children were examined and 600 of them were swabbed; 20 carriers were found, who were isolated, but no prophylactic serum was given in any of the 2,000 cases. Yet only 4 new cases developed. Peters says that had serum injection been administered to the entire 2,000 children in and around Dunkirk at the time the swabbing was carried out, one can readily imagine how easily the sudden cessation of the epidemic might have been attributed to it. The procedures of real importance in dealing with an outbreak of diphtheria are: 1, Bacteriologic examination of throats; 2, isolation of carriers of infection under proper medical supervision. Where these can be properly carried out there is really no necessity for prophylactic injection of antitoxin, for, with proper medical supervision, the antitoxin is itself such an efficient remedy that there is practically no danger for the patient, if the remedy is administered when the disease declares itself.

3. **Hereditary Dystrophy.**—Ogilvie and Easton describe cases of atrophy of the sternomastoid, both pectorales, and the deltoid in father and son (Punjabi Mussulmans), making its appearance at practically the same age, namely, from 22 to 25, in both cases.

4. **Yaws.**—Robertson describes the results of examinations in two series of cases of the resection of the yaw papule. There were present: 1, The pyogenic organisms; 2, large bacilli with square ends, containing spores occurring in groups; 3, large cocci in pairs; 4, occasionally a spirochete, probably that described by Castellani. Treatment consisted in washing night and morning with carbolized soap and application of dilute nitrate of mercury ointment to the papules. Potassium iodid in doses of from 10 to 20 grains was given twice daily to adults and from 2 to 5 grains to children. An iron citrate with cod-liver oil or petroleum emulsion is recommended for debilitated patients. Softening the thickened epidermis by sodium carbonate solution and scraping with the Volkmann spoon is expeditious. The paresis of the limbs disappears rapidly under electrical treatment.

5. **Inhalation and Injection Anesthesia.**—Dean considers lumbar anesthesia very satisfactory from two points of view: 1. The degree of anesthesia with appropriate doses can be rendered complete. 2. The large area amenable to this treatment, practically the whole body below the level of the umbilicus. The principal objection is the poisonous and treacherous character of cocain. With regard to general anesthetics, apart from their immediate dangers, we have to consider: 1. The harmful effects of the anesthetic on the respiratory and other organs of the body and the fact that surgical shock has not been abolished or even materially diminished by it. 2. The effects of ether, especially in abdominal surgery, are more far-reaching than those of chloroform, and Dean attributes to its subsequent poisonous effect a large part of the death rate from all grave abdominal and other operations in which general anesthetics are employed. He describes the methods of administering the anesthetic; the management of the patient, under which he records in five cases the patient's impressions; the reliability of the method, and its influence in protecting the patient from surgical shock. He concludes with the statement that in his opinion the whole method of lumbar anesthesia stands or falls on its value in protecting the patient from surgical shock, and our knowledge on this point should be codified as soon as possible.

6. **Cholecystectomy.**—Bland-Sutton recommends cholecystectomy, subject to those conditions for which judgment and experience teach that surgical intervention is really indicated, in the following conditions: 1, Injury to the gall bladder; 2, calculous cholecystitis; 3, acute (non-calculous) cholecystitis, and

gangrene of the gall bladder; 4, perforating ulcers of the gall bladder; 5, mucocele (*Hydrops vesicæ felleæ*); 6, chronic suppurative cholecystitis (empyema); 7, biliary fistulas; 8, malignant disease (cancer, sarcoma and endothelioma). Experience shows that removal of the gall bladder has no detrimental effect, immediate or remote, on the individual. A troublesome gall bladder requires the same radical treatment as surgeons mete out to the mischievous appendix, and removal is followed by the same permanent benefit. When its advantages are fuly appreciated the operation of cholecystectomy, like incomplete ovariotomy, will, he declares, be almost a thing of the past.

7. **Sigmoid Flexure Lesions of Colitis.**—Mummery emphasizes the fact that it is not safe to treat patients with symptoms of colitis without a careful examination into the cause with the sigmoidoscope, for, in the great majority of cases, a definite local lesion can be demonstrated.

9. **Prostatectomy.**—Pardoe arrives at the following conclusions:

1. Except in very early cases, it is not permissible to operate on carcinoma of the prostate, except with a view to permanent drainage.

2. In the case of fibrous enlargement interfering with micturition, piecemeal enucleation or a prostatectomy should be done. The mortality of the latter operation is practically *nil*, and the results are satisfactory, both immediately and permanently.

3. In very aged men with a marked tolerance of catheter life prostatectomy should not be urged.

4. Unfortunately, catheter life has serious discomforts and dangers for the majority of sufferers, and for these enucleation is by far the best treatment. It should be done at the period of election—namely, before acutic infection has taken place. He has tried both perineal and suprapubic complete enucleation, and much prefers the latter.

5. The surgeon should not refuse operation to patients seriously infected and very ill. Their lives are sure to be painful and seldom prolonged if operation is refused, and although the mortality is higher than in selected cases, it is not unduly high, especially if the operation is done in two stages.

10. **Total Enucleation of Prostate.**—Frever gives the results of his experience in performing enucleation of the prostate in 432 cases. There were 29 deaths: 11 from uremia, 5 from heart failure, 2 from septicemia, 2 from mania after the wounds were practically healed, 2 from liver disease, 2 from shock, 1 from exhaustion, 33 days afterward, 1 from heat stroke during convalescence, 1 from pneumonia, 1 from acute bronchitis, and 1 suddenly on the fifth day from pulmonary embolism. Many of the deaths were due rather to the incidents of old age than to the operation. The remaining cases were successful. He emphasizes the fact that success from this operation when properly performed means an absolute and permanent cure, the patient regaining the power of retaining his urine at will, and passing it naturally without the aid of a catheter, as well as ever he did.

11. **Resection of Intestine for Gangrene.**—In his remarks on his case, Childe points out that the length of the small intestines varies widely, as much as between 15 and 33 feet, so that the vital factor is really not the amount removed, but the amount left behind. An extraordinary point in his case was that though the bowel had a distinctly gangrenous odor, there was no sign of commencing peritonitis, and no peritonitis followed the operation. In regard to the method of anastomosis, he points out that it has been repeatedly emphasized that the success of the operation depends on the anastomosis being performed with bowel which the operator considers above suspicion. That being so, he suggests that an additional element of security lies in the closure of both ends of the divided tube and subsequent lateral anastomosis. This may not be so neat a job, but it leaves no weak spot.

13. **Abdominal Incision.**—Maylard advocates the more frequent substitution of the transverse abdominal incision for the vertical one, and arrives at the following conclusions:

1. When time is not of paramount importance, more permanently secure cicatrices result from transverse than vertical incisions, whether median or extramedian.

2. Transverse incisions afford more room for the treatment of pelvic diseases, and are also better for exploratory purposes.

3. Vertical incisions involve the division of fewer blood vessels, and the apertures can be closed by a single series of through-and-through interrupted sutures. For these reasons, therefore, they can be executed much more expeditiously than the transverse and should be employed in all cases where time is a serious consideration.

4. In dividing the sheath of the rectus, the chief end to be aimed at is to carry the incision as much as possible in the line of the fibers of the aponeurosis. Thus, in the upper part of the abdomen for, say, two inches from the xiphoid, the incisions should course obliquely from above downward and outward. In the lower part of the abdomen, for say, two inches from the symphysis pubis, the incisions should be carried obliquely upward and outward. In the central part of the abdomen—that is, between those parts just delineated—the incisions should be transverse.

5. If sufficient room can be obtained by separation of the recti muscles after division of their sheaths, the fibers of these muscles should not be cut; and when division is necessary it should be carried obliquely, so as, if possible, to leave some of the outer fibers undivided.

6. Serial suturing should be employed, and particular attention should be given to the accurate coaptation of the edges of the divided aponeurosis.

7. No operation should be performed, if the exigencies of the case do not otherwise demand it, when the patient has a cough which it is possible to cure or alleviate.

8. Four weeks should be allowed, at least, after the operation for rest in the dorsal or semirecumbent position, and two months more before any undue strain is exercised on the wound. In wounds which become septic, and therefore heal by granulation from six weeks to two months should be allowed for complete rest in the dorsal position.

14. **A New Operation for Mobile Kidney.**—Bishop considers the advantages of attacking the kidneys from the front to be many and obvious, now that interference with the peritoneum is no longer considered equivalent with death. He describes the technic of the operation.

15. **A New Operation for Hemorrhoids.**—Vernon considers the operation by excision and ligature crude and unscientific, while Whitehead's radical operation is severe, causes considerable hemorrhage, and not infrequently damages the sphincter. Vernon's operation consists essentially in passing a hollow metal bullet-shaped cone, two and one-half inches long and one inch in diameter, into the rectum. Two large pins, like hatpins, are then thrust from about three-quarters of an inch above the sphincter into the bowel through holes in base of the cone and out above the sphincter on the opposite side, the pins crossing at right angles. Then the lower part of the rectum and the whole of the pile area are transfixed on this cone; a piece of rubber tubing is fixed on one of the pins and wound round behind the pins, finishing at the starting point, causing the points to extend out and acting as a tourniquet. An incision is made all around the anus, just outside the mucocutaneous junction; the piles, all veins below the sphincter, and as much of the mucous tissue as desirable, are removed. This leaves three complete rings internally, the cut mucosa, then a clean sphincter, and outside of the cut skin. The rubber tube is removed and bleeding points are attended to. A catgut suture is started at the back of the wound in the skin, tying a knot and not cutting short. The cut mucous coat and the skin are then sewn together over the sphincter with a continuous suture till the starting point is reached, when the end is tied to the short end left by the first knot. The following advantages are claimed for this operation: 1. The complete removal of all piles and the pile area, so that there is less tendency to relapse or recurrence. 2. Ability to see exactly what is being removed. 3. Less liability to damage the sphincter. 4. Very little hemorrhage, and so less shock to the patient. 5. The operation is clean; no retained enema or flatus can be passed while the plug is in position. 6. The healing of the wound is rapid, and there is no tendency to subsequent constriction. The operation can be performed either during an acute attack of inflamed piles or during a quiescent stage. Prolapse of the rectum has been operated on in a similar way with complete success.

18. **Bone Grafting.**—Drew reports the case of a severely crushed leg from which two inches of tibia had been squeezed out, though the lacerated periosteum remained. After sterilization and fixation in plaster for three months, no bone filled the gap. Drew then killed a lamb, removed the tibia, split it and placed the strips with raw surfaces in contact with raw surfaces of the wound. Three and a half months later the man's leg was as good as ever and he returned to work.

Lancet, London.

Oct. 5, 1907.

20 *University College and Some Points in Medical Education. Sir R. Douglass Powell, London.

21 *Res Medica, Res Publica: the Profession of Medicine, Its Future Work. W. Ewart, London.

22 The First Hundred Years of the Geological Society of London. M. G. Graham, London.

23 Recent Epidemic of Trypanosomiasis at Mauritius. A. Edington and J. M. Coutts Edinburgh.

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24 *Case of Acute Lupus Erythematosus. G. W. Dawson, London.
25 Two Cases of Hyperplastic Tuberculosis of the Cecum Treated by Excision; Recovery. W. G. Nash, Bedford.
26 *Relation of Polymastia to Tuberculosis. T. Iwai, Japan.
27 *Three Cases of Lobar Pneumonia with Unusual Complications. P. C. P. Ingram, London.
28 Case of Primary Cancer of Left Bronchus with Unusual Association of Pressure Symptoms; Secondary Growths in Thyroid and Lymphatic Glands. G. A. Allan, Glasgow.
29 Ruptured Aneurism of the Popliteal Artery in a Man, Aged 73 Years, the Subject of Chronic Lead Poisoning, Successfully Treated by Ligature of the Superficial Femoral. T. J. T. McHattie, Edinburgh.

20. **Medical Education.**—Powell refers to the practice at University College, London, of separating the first two years' subjects of anatomy, physiology, chemistry, physics, biology and materia medica from those of the hospital medical curriculum, and making them college subjects rather than medical school subjects, as merely heading the inevitable drift of events. He points out that it is only by large classes that the expenses of equipment for teaching such subjects can even in part be met. The subjects of anatomy and physiology are even now too large and absorbing to be taught by men engaged in the arduous work of the practice of medicine; and, further, the duties of the dissecting room and the wards can not, in the light of modern antiseptic requirements, be regarded as compatible, either for teacher or student. Even chemistry and biology can not be efficiently taught by men engaged in hospital work or private practice. With regard to the danger that, under the new régime, these scientific subjects will be taught by professors having no medical knowledge or special sympathy with the aims of medicine, the student must guard himself against alienation from the application of his teaching to the needs of suffering humanity, or he will be apt to acquire an impatience with sick people, the problems connected with whose maladies he may regard as too full of variants and compromise to command his interest. Such a man, however good a scientist, will make a very bad physician.

21.—See abstract No. 46.

24. **Acute Lupus Erythematosus.**—Dawson reports a fatal case of lupus erythematosus and describes the postmortem appearances. He points out that so many cases of this acute development in the disease have supervened on the application of an irritant to the chronic condition, as to make one hesitate to apply carbolic acid or other strong applications when the disease is at all extensive.

26. **Polymastia and Tuberculosis.**—Iwai continues his consideration of the subject of polymastia, already reported in two of its phases, and concludes the paper as follows: 1. The cases of polymastia are found more among the tuberculous—especially pulmonary—patients than among the non-tuberculous. The former are nearly twice as numerous as the latter. 2. Those who have polymastia are more liable to be affected by tuberculosis than those who have not. The difference between them is more than 15 per cent.

27. **Lobar Pneumonia with Complications.**—Ingram reports three cases with the following complications: All three had an erythematous rash, and Case III had a papular rash as well and in addition a pericarditis and a pneumococcal abscess.

Intercolonial Medical Journal, Melbourne.

Aug. 20, 1907.

30 *Salpingitis. G. Rothwell Adam, Melbourne.
31 *Acidosis (Delayed Chloroform Poisoning). A. N. McArthur, Melbourne.
32 Brachial Paralysis Successfully Treated by Nerve Suture. Bell Kilvington.
33 Pneumonia in Children. W. H. Summons.
34 Intestinal Perforation in Typhoid Fever. G. C. Rennie, Melbourne.
35 Some Surgical Emergencies. R. A. Stirling and H. B. Devine.
36 Case of Rupture of Bladder. P. H. Lang, Melbourne.
37 Tachycardia, Apparently of Gastric Origin. C. Trent C. de Crespigny, Melbourne.
38 Strangulation by Meckel's Diverticulum—Operation—Recovery. F. M. Johnson and F. D. Bird, Melbourne.
39 Enteric Intussusception Caused by Meckel's Diverticulum with a Polypoid Growth. T. F. Ryan, Shill.
40 Recurrent Paralysis (Masked Spina Bifida). H. I. Holmes.

30. **Salpingitis.**—Adam, after a general discussion of the nature and far-reaching effect, not only on the individual but on the community, of this disease, considers the question of possible restoration of function. In the chronic variety, when the onset is insidious, the damage to the tubes precludes any hope of restoration of function and the best result that can be obtained is renewal of health by removal of the diseased structures. In acute cases, however, which are not confined to gonococcic infection, for this form is well recognized in acute puerperal sepsis, the patient not infrequently regains not only health but the reproductive functions also. Adams condemns perfunctory treatment of gonorrhea in the female with astringent and antiseptic douches, not only as inefficient, but as positively conducing to invasion of the upper area of the genital tract. Early and careful treatment of the initial vaginitis will frequently prevent tubal infection. With a view to the preservation of the function of the tubes, he suggests that in a certain proportion of cases drainage of them may result in a complete recovery. He suggests a free opening through the vaginal route into Douglas' pouch and the establishment of gauze drainage as early as possible after the signs of tubal infection manifest themselves. The damage may thus be limited, and the possible future successful performance of a plastic operation on the tubes be rendered possible. The endometritis must, of course, be cared for, so that the uterine end of the tube may remain patent. With regard to general prophylaxis, since moralists and legislation have failed, education of the public to a knowledge of the material dangers of gonorrhea, and the overthrow of the idea that clap is but a trivial disease, are counseled, and this work must be done by the medical profession.

31. **Acidosis.**—McArthur reports a fatal case of acidosis consequent on chloroform anesthesia, and discusses it as follows: He is not impressed with the ordinary treatment by the injection of concentrated salines, and asks whether some treatment can not be devised in which oxygen will be liberated in the tissues, and the formation of acids be thus prevented; or if it is possible that stimulation of the general embolism by such recognized metabolic stimulants as thyroid or suprarenal extract may be serviceable. He recommends the examination for diacetic acid and acetone in the urine, both before and after operation, as a routine matter.

The Journal of Tropical Medicine, London.

Sept. 16, 1907.

41 Treatment of Elephantiasis. A. Castellani, Colombo, Ceylon.
42 *Malaria of the East Coast of Trinidad, B. W. I. A. B. Duprey, Trinidad.
43 Schistosomum Mansoni. L. W. Sambon.
44 A Filaria of the Red Grouse. L. W. Sambon.

42. **Malaria.**—Duprey describes malaria as it occurs on the east coast of Trinidad, but some of his remarks on treatment have general application. Heroic doses of quinin are unnecessary; from 15 to 20 grains in the course of a day are sufficient in even the most malignant cases. It is useless to give quinin with a thickly coated tongue. The bowels must first be cleared, for which purpose he recommends one-grain doses of calomel and sodium bicarbonate or rhunarb every hour, for six or seven hours, followed by a dose of castor oil or salines. This also checks the vomiting of malaria and answers well in diarrheal cases in which the motions are thin and foul. He uses a hot bath with plenty of lime juice squeezed into it to precede the calomel and soda. Lime juice baths are an extremely old practice in malarial fever in the West Indies. In regard to the prophylaxis of malaria the indiscriminate use of quinin can not be too forcibly discounted.

Medical Press and Circular, London.

Oct. 2, 1907.

45 Congenital Anomalies of the Eye. S. Stephenson.
46 *"Res Medica, Res Publica," the Profession of Medicine—Its Future Work and Wage. W. Ewart.
47 *A Word for Trypsin. A. K. Matthews.
48 The Out-Patient's Room. A. Edmunds.

46. **The Profession of Medicine.**—Ewart closes a masterly and philosophical, albeit somewhat pessimistic, address with the following conclusions:

1. As a profession we can advise and we can act; but the business of health is of the state. State organization and subvention for increasing labors undertaken in its service are unavoidable, even at the cost of public treasure, and for us of a nominal loss of independence.

2. A ministry of public health and a state examination are the definite steps for immediate contemplation.

3. Our practical policy is to be "prepared for any fate" by unlimited adaptability for the coming changes of which we only know

that they will exceed the record of the past. And this means raising the preliminary educational standard to its highest pitch, which can never be too high for the possibilities ahead. This is also our only plank of safety from the dangers of overcrowding and of disorganization.

4. Indispensable to teachers and to rulers, our cooperation should be worthy to command its own terms.

5. The fundamental reform in the status and remuneration of the profession demanded by its vast labors and service can only be won by high standards of self improvement and by the combined efforts of the highest and most influential with the rank and file.

6. The details of reorganization are beyond the wit of individual man, but would evolve from the operation of the four principles which are essential: (1) Exclusion from our portals of any but the highest preliminary education; (2) uniformity of the professional state qualification; (3) recognition of the equality in claim to adequate remuneration; and (4) assumption by the state of those responsibilities which are not ours, but of the state.

7. Our future wage should not fall short of that competency which allows scope for the best work. Wealth it never will be. As of old, it must remain largely consciousness of doing our best as healers and helpers, as students and teachers, and as a moral and intellectual élite, with the added satisfaction of belonging to a profession not only honorable but honored.

47. Trypsin.—Matthews reports a case of cancer of the tongue in which the patient was turned away from Guy's Hospital as "too far gone for operation." After a week of daily injections of trypsin the dose was raised from 15 to 30 minims. The result is thus described: "The glands entirely disappeared, the growth was reduced to half its size, no further pain, salivation greatly reduced, no recurrence of hemorrhage, and speech and deglutition markedly improved." As Matthews was only acting as locum tenens for another physician, on the latter's return the patient left his hands. The other physician saw no indications for continuing trypsin, as there was no pain or hemorrhage; the man died six months later from exhaustion.

Glasgow Medical Journal.

September, 1907.

49 Disease of the Bladder and a Method of Draining the Kidney and Bladder. D. Newman, Glasgow.
50 Two Cases of Ludwig's Angina. A. Napier, Glasgow.
51 Ovarian Tumors Complicating Pregnancy, Labor and the Puerperium. M. Munroe Kerr.
52 Acute Empyema of the Mastoid Cells in which the Cavities Made by Operation Were Treated by the Iodoform Wax Bone-Plugging Method of Mosetig-Moorhof. J. S. Barr.
53 *A Danger in Urine Testing. W. J. Rutherford, Glasgow.

53. Danger in Urine Testing.—Rutherford calls attention to the fact that guaiacum and strong nitric acid are incompatible and that they make a mixture with highly dangerous properties. He discovered these facts as the result of experiments made after an explosion in a test-tube in which his face was burned with nitric acid. It occurred on pouring some of the acid into an imperfectly cleaned test-tube which had previously been used in testing for blood by the guaiacum blue reaction.

Clinical Journal, London.

Sept. 26, 1907.

54 Excision of Tumors of the Chest Wall. C. B. Lockwood.
55 Uric Acid and the Purin Bodies. W. Langdon Brown.
56 Drainage of the Hepatic Duct, Especially in Serious Infectious Processes of the Liver.

Sept. 18, 1907.

57 A Postgraduate Lecture on Some Aspects of Difficulty in Micturition. W. Bennett.
58 Some Surgical Affections of the Right Iliac Fossa which Simulate Appendicitis. H. J. Waring.
59 Some Clinical Points Bearing on the Administration of Anesthetics, with Especial Reference to Anesthetics in Dentistry; Vomiting in Its Relation to Anesthetics. L. E. Ellis.

Presse Médicale, Paris.

September 26, XV, No. 77, pp. 609-616.

60 *Nasal Origin of Lupus of Face. (Rôle de la muqueuse pituitaire dans la pathogénie du lupus vulgaire de la face.) H. Caboche.
61 Improved Medical Syringe. (Nouveau modèle de seringue médicale.) R. Lhomme.
62 *Nasal Origin of Lupus of Face. (Rôle de la muqueuse inatious urinaires.) L. Lortat-Jacob and J. Heitz.
63 The Vegetable-Egg Milk Diet. (Régime lacto-ovo-végétarien.) A. Martinet.

September 28, No. 78, pp. 617-624.

64 *Clinical and Histologic Study of the v. Pirquet Cutaneous Reaction to Tuberculin in Children. (Cuti-réaction à la tuberculine chez les enfants.) M. Ferrand and J. Lemaire.
65 *Anesthesia of the Teeth by Way of the Nose. (Procédé d'Escat.) P. D.

October 2, No. 79, pp. 625-632.

66 *Gymnastics of the Lumbar Region. P. Desfosses.
67 Systematic Medicinal Treatment of Arteriosclerosis. A. Martinet.
68 *Prophylaxis of Syphilis. Metchnikoff.

60. Nasal Origin of Lupus of Face.—Caboche presents an array of evidence to sustain his assertion that lupus of the face, in nearly every case, is the result of the propagation to the skin, by way of the lymphatics, of a lupous lesion on the nasal mucosa. Treatment of the latter alone is sometimes followed by the retrogression of the superficial lupus, and, inversely, if the latter is treated alone there is liable to be reinoculation from the nasal lesion.

64. Cutaneous Reaction to Tuberculin in 100 Children.—Ferrand and Lemaire obtained a positive response both to cutaneous and ocular inoculation of tuberculin in 29 out of 49 cases, while in 34 out of 39 cases the positive response was confirmed by a positive reaction after subcutaneous injection of tuberculin. The cutaneous reaction is characteristic, they say, and does not resemble that induced by inoculation with diphtheria antitoxin or various drugs, etc.

65. Anesthesia of the Teeth by Introducing a Cocain Tampon into the Nose.—The technic and the anatomy of the parts are described with illustrations and the extent of the anesthesia induced. The intimate relations between the anterior dental nerve and the floor of the nasal fossa explains how the nerve is anesthetized by the cocain tampon. The latter should be about the size of an almond and be inserted in the anterior part of the nasal fossa.

66. Exercises of the Lumbar Region.—Desfosses gives nineteen illustrations of various exercises and their action on the different muscles. He emphasizes the importance of utilizing the weight of different parts of the body as a means of heightening the resistance and thus making greater demands on the muscles without the necessity for weights or appliances.

68. Prophylaxis of Syphilis.—Metchnikoff has found a salve containing 33 gm. of calomel (495 grains); 67 gm. (1,000 grains) of lanolin, and 10 gm. (150 grains) of petrolatum an effectual means of preventing the development of syphilis after inoculation of the virus. He refers to the experience of the medical student, Maisonneuve, mentioned in these columns at the time, who escaped infection from a massive inoculation of the virus, followed an hour later by application of the calomel salve. This experience has been repeated again and again on monkeys. This preventive measure is effectual only when applied during the first few hours after inoculation, but he found that injection of 0.03 cg. of atoxyl, per kilogram of body weight, prevented the development of syphilis if the injection was made within a period of fifteen days after inoculation. This experience was constantly repeated in his experiments on monkeys at the Pasteur Institute. Applying these findings to man, it would require about 2 gm. (30 grains) of atoxyl for an adult of average weight. This amount is too large to be safely used, but Hallopeau believes that the same result can be accomplished with an injection of 75 cg., followed by a second injection of 60 cg. and a third of 50 cg.—a total of 185 cg. (27.75 grains). He has applied this dosage in the clinic and has never observed symptoms of intolerance or intoxication. Metchnikoff ascribes this prophylactic action of calomel and atoxyl to the fact that the pale spirochete does not adapt itself at once to the human organism, and some time elapses after its invasion before it proliferates to any extent. For this reason, he says, the prophylaxis of syphilis is a comparatively easy matter. This article was read at the International Congress of Hygiene at Berlin last month.

Semaine Médicale, Paris.

October 2, XXVII, No. 40, pp. 469-480.

69 *Rachitis and Syphilis. Marfan.
70 Technic of Local Anesthesia with Cocain for Radical Operation for Empyema of Antrum of Highmore. W. Schilperoort.

69. Rickets and Syphilis.—Marfan warns that a syphilitic origin for rachitis is more than probable when this condition develops during the first three or four months of life, and affects the skull predominantly, with anemia and enlargement of the spleen. Syphilis, he asserts, will be found in the antecedents in two out of every three cases of this kind. Rachitis of alimentary origin does not appear until after the sixth month; it affects the legs more than the skull; anemia is less pro-

nounced, and the spleen is seldom enlarged while digestive disturbances and big belly are frequently encountered.

Berliner klinische Wochenschrift.

September 30, XLIV, No. 39, pp. 1235-1266.

71 Results of Experimental Cancer Research. (Krebsforschung.) E. F. Bashford, J. A. Murray and M. Haaland.
72 *Elimination of Mercury by Syphilitics. (Quecksilberausscheidung bei Syphilitikern.) G. Diesselhorst.
73 *Pain Sensibility of the Skin in Disease of Internal Organs. (Zustand der Schmerzempfindlichkeit der Haut bei inneren Organerkrankungen.) R. J. Wilamowski.
74 *Successful Treatment of Angina Pectoris with Powerful Carbon Arc Light Baths. (Behandlung von Angina pectoris mit starken Kohlenbogenlichtbädern.) K. A. Hasselbach and H. Jacobäus.
75 *Anuria and Its Treatment. J. Vogel.

72. **Elimination of Mercury by Syphilitics.**—Diesselhorst describes the modified electrolytic technic with which he determines the proportion of mercury eliminated in urine and feces after a course of mercurial treatment. He first evaporates the urine in a vacuum. The findings in several cases of syphilis are tabulated. In the first the mercury first appeared in the urine at the fifth day after the inunctions were commenced, the proportion increasing from 0.2 mg. to the highest amount, 1.3 mg., after cessation of the treatment, and gradually declining afterward to 0.1 mg. and traces by the end of two months after the close of treatment. The proportion of mercury in the feces was less than that in the urine. The proportion of mercury eliminated after subcutaneous injection seems to be larger than under inunctions. The findings harmonize with those of Bürgi, who used the Farup test.

73. **Sensibility of the Skin in Diseases of Internal Organs.**—Wilamowski's experience confirms Head's assertions in regard to the zones of ultrasensitiveness with certain internal affections, but he has found that in some persons the disturbances are in the line of reduced rather than increased sensibility. This hypoanalgesia seems to obey the same laws and to have the same significance as the hyperalgesia under such circumstances, both evidently being of reflex origin.

74. **Treatment of Tendency to Angina Pectoris with Powerful Arc Light.**—This communication from the Finsen Light Institute at Copenhagen describes the results of application of a powerful arc light, of 55 volts and 150 amperes, to study its effect on the respiration and blood pressure. Exposures were made as close as possible to the lamp and for an hour daily, on one of the writers of the article. The results of this research were the discovery of a number of new indications for the application of this form of phototherapy, but the present article deals only with its application in twenty-six cases of angina pectoris. Almost the entire surface of the patient is exposed to the action of the lamp, perseveringly and intensively, until a dermatitis results. The exposure is repeated after an interval of five days, until the skin becomes permanently gorged with blood. This generally requires ten exposures. The skin feels warmer than usual; its vessels react more readily to mechanical and thermic stimulii, and it is a warm, reddish yellow color. This condition persists for a long time without further intervention, frequently for from six to nine months. If the light is less intensive and the exposures shorter, the skin merely tans as in sunshine, and there is none of the desired effect. The aim is to attract larger amounts of blood to the superficial blood vessels, and this technic realizes this aim permanently. This form of treatment seems destined, the writers add, to supersede many forms of hydrotherapy and balneotherapy, massage, chemical revulsion and internal measures to regulate the circulation. The internal organs are relieved by this powerful attraction of the blood to the superficial vessels, and the blood pressure is reduced, by 10 per cent. on an average, for several months. A new condition of things is brought about and the task of the heart is much lightened. The patient breathes more deeply and becomes less sensitive to cold and drafts; the skin reacts better for months afterward to massage and rubbing. The measures usually used for angina pectoris all aim at the same thing, but none accomplishes so much and for such long periods, they assert, as the carbon arc-light treatment. Four cases of typical angina pectoris are reported in detail to demonstrate the permanent benefit of the treatment, the clinical results harmonizing in every respect with the theoretical anticipations. Only one out of the twenty-six patients with angina pectoris failed to show benefit. The chemical light bath is borne remarkably well even by much debilitated patients. Symptoms are occasionally observed at the height of the erythem indicating relative anemia of the brain, but the authors state that these soon pass away.

75. **Anuria.**—Vogel reviews the different causes of anuria and remarks in regard to treatment that venesection is liable to render good services in anuria in the course of chronic nephritis. This improves the heart action, but if it fails to induce diuresis it might be possible to decapsulate the kidney as a last resort. Catheterization of the ureters is less dangerous than this, and offers chance of success when the anuria is the result of inhibition from toxic and nervous influences. Counter-irritation of the mucosa of the ureter may arrest this inhibition of the kidney secretion and induce a reflex polyuria, such as is frequently observed when the ureters are catheterized. The prospects for success are good in chronic uremia in interstitial nephritis while the kidneys are still capable of functioning to some extent.

Deutsche medizinische Wochenschrift, Berlin.

September 26, XXXIII, No. 39, pp. 1569-1624.

76 *Ophthalmo-Diagnosis of Typhoid Fever. A. Chantemesse.
77 *Predisposition to Disease and Virulence of Germs. (Disposition und Virulenz.) D. Finkler.
78 Inhalation the Main Source of Tuberculous Infection in Experiments with Guinea-Pigs. (Vergleichende Untersuchungen über die Bedeutung der Atmungsorgane und des Verdauungstractus für die Tub-Infektion.) R. Pfeiffer and E. Friedberger.
79 Differential Diagnosis of Typhoid Bacilli by Malachite-Green Culture Medium. (Malachitgrünnährböden.) F. Loeffler.
80 *Spread of Typhoid by Bacilli Carriers. (Verbreitung des Typhus durch Bazillenträger.) H. Kossel.
81 *Experiences to Date with Antiserum Treatment of Epidemic Cerebrospinal Meningitis. (Meningococcen-Heilserum bei Genickstarrekranken.) A. Wassermann.
82 *Bacteriologic Studies of Pneumococcus. (Pneumoniecoccen.) L. Heim.
83 Resistance to Anthrax. (Resistenz gegen Milzbrand.) M. Gruber and K. Futaki.
84 Preventive Action of Atoxyl in Experimental Syphilis in Monkeys and Rabbits. (Präventive Wirkung des Atoxyls.) P. Uhlenhuth, E. Hoffmann and O. Weidanz.
85 *Important Points in Disinfection. (Aphoristische Betrachtungen über einige praktisch und theoretisch wichtige Punkte der Desinfektionslehre.) W. Kolle.
86 Human and Cow's Milk in Infant Feeding. (Frauenmilch und Kuhmilch in der Säuglingsernährung.) F. Hueppe.

76.—This subject was discussed editorially in THE JOURNAL A. M. A., Sept. 28, 1907, page 1119.

77. **Predisposition to Disease and Virulence of Germs.**—Finkler reviews the facts learned from modern bacteriology and immunity, showing how all tend to prove the existence of an individual, varying predisposition for or against disease, and also the existence of varying degrees of virulence in the germs. All degrees of variability are possible in each, but it must never be forgotten that both predisposition and virulence are to be taken into account—never one alone.

80. **Spread of Typhoid by Bacilli Carriers.**—All the articles in this issue of the *Deutsche med. Wochenschrift* are by men who are leaders in preventive medicine, and the issue is dedicated to the International Congress of Hygiene and Demography which convened in Berlin during that week. The topics of the articles are among those discussed at the congress, and special interest centered in the question of healthy bacilli carriers. Kossel thinks that they are an important factor in the spread of typhoid fever by articles of food and also in the so-called typhoid houses. He describes an epidemic of typhoid which was traced to a certain dairy, but nothing suspicious of typhoid could be found until it was discovered that one of the farm hands, who helped in the milking, was a constant bacilli carrier. The man had worked on the farm for twenty years and was not aware that he had ever had typhoid fever, but typhoid bacilli were found repeatedly in his stools. The proprietor of the dairy was warned not to employ this man about the cows, and the epidemic was arrested. Several months later a case of typhoid developed in a family supplied with milk from this dairy, and immediate investigation revealed that the bacilli carrier in question had been set to milking again. Kossel regards this experience as extremely important, and as testifying to the necessity for examining for

bacilli carriers in dairies, etc., as a further precautionary measure against contaminations of milk.

81. **Serum Treatment of Meningitis.**—Wassermann reports 102 cases of epidemic cerebrospinal meningitis in which antimeningococcus serum treatment was instituted. It was found harmless under all conditions, even for children, and had a curative effect when injected early in the disease. After the subacute or chronic stage is reached it ceases to have any influence on the disease. In severe cases it was injected into the spinal canal, after withdrawal of a little more fluid than the amount of serum to be injected. Doses of from 5 to 10 c.c. can be repeated two or three times a day. The injections must be kept up after improvement, as this disease is peculiarly liable to relapses

82. **Technic of Cultivating the Pneumococcus.**—Heim describes his improved technic and remarks that his previous announcement in regard to drying pneumococci on silk threads does not seem to have attracted the attention it deserves. Pneumococci thus dried on silk threads retain their vitality and virulence for six months at least, as also the *Streptococcus mucosus*, typhoid bacilli from agar cultures and diphtheria bacilli from Löffler's serum. The typhoid and diphtheria bacilli kept for two years and tetragenus for five, with all their properties apparently unimpaired.

85. **Disinfection.**—Kolle emphasizes the importance of the ions in disinfection, and states that the disinfecting power of a substance does not depend so much on its concentration as on the ready dissociation of the ions in it. In disinfection of a house, he declares that prevention of contamination is as essential during the course of a disease as thorough disinfection afterward. He states that the formaldehyd spray is cumbersome and exposes to danger from fire, and describes a simple means of disinfection with a mixture of 29 parts paraformaldehyd and 71 parts barium peroxid. When water is added, powerful chemical action results, generating formaldehyd and steam. The reaction occurs more readily when the water is at a temperature of from 68 to 77 F. (20 to 25 C.), and the powder is thoroughly stirred. In regard to disinfection of the hands, he commends the recent efforts to make a covering for the hands by applying a flexible varnish that does not irritate and yet is germ-proof, while it can be readily washed off. He advocates for the general practitioner Schumberg's technic of scrubbing the hands thoroughly with a mixture of 2 parts alcohol to 1 of ether, to which 0.5 per cent. nitric acid has been added. This mixture not only has a disinfecting action but shrivels up the skin, confining the germs in the crevices. Even during a long operation there is no loosening up of the crevices. Water in which a hand thus treated is washed or organic fluids in contact with it, show remarkably few germs, as he has determined by extensive tests of this technic. It is particularly useful in military surgery. Hands scrubbed repeatedly in this solution do not suffer from it, but the skin retains its flexibility, free from cracks and chapping, even when the hands cracked and became eczematous under other methods of disinfection. Tavel has been using this technic for a long time, and prefers it to all other methods of disinfecting the hands for an operation.

Monatsschrift für Geb. und Gynäkologie, Berlin.

September, XXVI, No. 3, pp. 315-50.

87 *Mensuration of Child in the Uterus. (Messungen des Kindes in utero.) E. McDonald.
88 Pelvis-enlarging Operations. (Beckenerweitende Operationen.) A. Frey.
89 *Pavement Epithelium in Child's Uterus. (Vorkommen von Plattenepithel im Uterus von Kindern.) K. Natanson.
90 Importance of Blood Clots in Posterior Vagina After Delivery. (Bedeutung des Zweifelschen Blutcoagulum.) G. Schubert.
91 *Functioning of Mammary Glands. (Funktion der weibl. Brustdrüse.) H. Cramer.
92 One-eyed Monsters. (Cyklopie.) M. Unger.
93 Sterility in Women. (Sterilität des Weibes.) K. Torkel.

87.—This article appeared in THE JOURNAL A. M. A., Dec. 15, 1906, page 1979.

89. **Pavement Epithelium in Child's Uterus.**—Natanson found the average size of the uterus in 117 children under 10 to be about 25.71 by 13.72 and 5.63 mm. He found pavement epithelium in about 10 per cent. of all the uteri examined in children under two and a half years of age. It usually vanishes entirely as the uterus develops further, and its abnormal persistence may be the source of epithelioma in later life.

91. **Functioning of Mammary Glands.**—Among the interesting cases cited by Cramer is that of a young woman who aborted at the eleventh week, but was left with such quantities of milk that she served acceptably as a wet nurse for six months. In another case a ii-para had uterus and ovaries removed as the child was delivered by Cesarean section and she had suffered much from osteomalacia. Notwithstanding the absence of uterus and ovaries, she was able to nurse her child satisfactorily for a year. The mammary functioning may be temporarily depressed by a severe fright or other emotion, Cramer states, the amount of milk produced being temporarily reduced.

Münchener medizinische Wochenschrift.

September 24, LIV, No. 39, pp. 1913-1968.

94 *Ventilation by the Wind. (Deckenluft-Ventilation durch Wind.) H. Quincke.
95 Albumin-Splitting Antigen of Fatigue Toxin; Its Nature, and Its Antibody. (Eiweissabspaltungsantigen von Ermüdungsantigen von Ermüdungstoxincharakter—Kenotoxin—und sein Antikörper. Aktivierung protoplasmatischer Substanz.) W. Weichardt.
96 Opsonins and Phagocytosis. H. Kämmerer.
97 Electric Charges of Toxin and Antitoxin. H. Bechhold.
98 Loss of Oxygen in Spring Water. (Ueber ein ausgedehntes Vorkommen von sauerstofffreiem Trinkwasser in Brunnen.) H. K. Lang.
99 Mode of Spread of Pemphigus Neonatorum. Kownatzki.
100 *Typhoid Bacilli in Lice from Typhoid Patients. (Typhusbacillen in den Läusen Typhuskranker.) N. Abe.
101 *Arsenic in Treatment of Syphilis. Bettmann.
102 *Ultramicroscopic Technic for Detecting Spirochetes. (Wert der Dunkelfeldbeleuchtung für die Klin. Diagnose der Syphilis.) A. Beer.
103 *Treatment of Join Affections. (Med. und lokale Behandlung der rheumatischen und gonorrhoischen Gelenkerkrankungen.) G. Treupel.
104 Appliance for Mechanically Applying Drugs in Inunction Treatment with Hand or Motor Power. (Einreiber zur raschen Ausführung der Schmierkur mit Hand- oder Motorbetrieb.) E. Jacobi.
105 Mutual Relations Between the Process of Ovulation, Including Menstruation, and Internal Diseases. (Wechselbeziehungen zwischen dem Ovulationvorgang und inneren Krankheiten.) G. Riebold. Commenced in No. 38.
106 Position of the Tuberculosis Dispensaries in the Campaign Against Tuberculosis as a Disease of the Masses. (Fürsorgestellen für Lungenkranke.) H. Beschorner. Commenced in No. 38.

94. **Device for Ventilation by Wind.**—Quincke describes a device which he has found very useful in ventilating hospital wards, etc. A pipe from 10 to 20 cm. in diameter is let into the wall about 7 feet from the floor. The pipe runs horizontally for from 10 to 20 cm. and then upward, inside the room, for the same distance, forming a rounded right angle. This pipe is in the outer wall, facing the direction of the prevailing winds. A similar pipe in the opposite outside wall carries off the air. Each pipe has a cover to close when the wind is too strong. He has found that this provides ventilation without drafts when there is any wind.

100. **Typhoid Bacilli in Lice on Typhoid Patients.**—Abe found typhoid bacilli in 75 per cent. of the body and head lice taken from typhoid patients at Kyoto. He could not find any bacilli in fleas from the patients or nurses, but this might have been due to the small number of fleas that could be found.

101. **Arsenic Treatment of Syphilis.**—Bettmann reviews his experience with arsenic in the treatment of syphilis. He found it effectual sometimes in curing the cutaneous lesions, but it seemed to be unable to prevent the development of other manifestations, which appeared and progressed as if no treatment were under way. He thinks that probably the older preparations of arsenic will be found as effectual as atoxyl.

102. **Ultramicroscopic Technic in Examining for Spirochetes.**—The principle of the ultramicroscope is the intense illumination of the object alone while the background is left unilluminated. Beer relates the favorable experiences at Lesser's clinic with this technic for the clinical diagnosis of syphilis.

103. **Treatment of Joint Affections.**—During the last few years Treupel has treated patients with acute or chronic articular rheumatism, or gonorrheal affections of the joints, with systematic courses of the salicylates plus local hyperemia. Fever was observed in about four-fifths of the 471 patients

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with rheumatism. Sodium salicylate seldom failed to show results in twenty-four hours when given in doses of from 60 to 90 grains (4 to 6 gm.); this amount was reduced when improvement became evident. Local hyperemia was induced in various ways; constriction and superheated air proving the most useful. Constriction, however, can not be applied to the shoulder or hip. The constricting band was applied for from two to four hours a day. Klemperer has recently reported cures in 70 per cent. of such cases with constrictive hyperemia alone, but Treupel advises against trusting to it exclusively, as he believes that the salicylates are necessary. In chronic cases alternation of constriction and superheated air gave good results. As soon as passive movements are possible he commences giving warm baths, and at first the passive movements are only given in the bath. He follows practically the same technic in gonorrheal rheumatism and reports good results in 12 cases. In 46 cases of chronic rheumatism temporary arrest of the condition was achieved, but only after months of this treatment in addition to administration of salicylates by intravenous injection.

Virchow's Archiv, Berlin.

September, CLXXXIX, No. 3, pp. 337-528.

107 Mixed Tumors of Salivary Glands of Endothelial Origin. (Mischtumoren der Speicheldrüsen.) E. Martini.
108 Case of Primary Adenocarcinoma of Lung with Ciliated Columnar Epithelium. O. Horn.
109 Case of Lipoma in Broad Ligament. Borrmann.
110 Structure, Entering Vessels and Growth of Wart-Shaped Angiomas of the Skin. (Warzenförmige Angiome der Haut.) S. Ogawa.
111 Myelomas. C. H. Permin.
112 Sclerosis of the Veins. (Phlebosklerose.) R. Kaya.
113 Case of Probably Congenital Hypertrophy of the Musculature of the Esophagus with Congenital Hypertrophic Stenosis of the Pylorus. W. E. Ehlers.
114 Leprosy in Art. (Lepra in der Malerei.) W. E. stein.
115 Definition of Conception of "Malformations." (Definition des Begriffs "Missbildungen.") E. Schwalbe.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

LX, No. 2 pp. 161-368. Last indexed, July 20, p. 287.

116 *Bacteriology and Biology of Congenital Syphilis. H. Bab.
117 Structure and Etiology of Membrane of Hematocele. C. Maennel.
118 *Leucoplakia and Carcinoma of Vagina and Uterus. O. von Franqué.
119 Necrosis and Suppuration of Myomas. (Nekrose und Vereiterung der Myome.) Id.

116. **Bacteriology and Biology of Congenital Syphilis.**—Within the last two years, Bab remarks, the discovery of the pale spirochete, the transmission of syphilis to animals and the discovery of the biologic test and serodiagnosis have revolutionized our conceptions of syphilis and opened new fields for research. As a contribution to the new research he describes his examination of 53 infants with congenital syphilis. Only 16 were born alive and only 7 lived for more than a few days. Spirochetes were found in 87.5 per cent. in the lungs; in the pancreas in 80 per cent.; in the skin, nose and eyes in from 66.7 to 25 per cent., but the placentæ were always free from spirochetes. His research has shown among other things that the spirochetes have a decided chemical affinity for mercury, such as they display also for silver. He calls attention to the vital importance of applying the complement deviation test to the milk of women in deciding whether they can nurse a syphilitic infant. With this test it is possible to demonstrate in the milk the presence or absence of antibodies. Examination of the milk of 4 syphilitic women revealed the presence of antibodies in large amounts. The children nursed with this milk would benefit immeasurably by the antibodies imbibed in it. If only the child is known to be syphilitic, examination of the milk will show whether the mother is a latent syphilitic. If very little antisubstance or neither antigen nor antibody is found in the milk, the woman is almost or entirely free from syphilis, and she ought not to nurse the child for fear of becoming infected by it. If the mother is syphilitic and the child apparently healthy, it would better be brought up on artificial food unless an abundance of the antibody can be positively determined in its serum. This avoids the danger of infecting the child and of possible infection of a wet nurse. If signs of syphilis develop later, then a syphilitic wet nurse can be obtained. A number of interesting points are brought out in his review of 64 syphilitic cases and 9 controls. In one case spirochetes were found in a child born eighteen years after the father had contracted syphilis. The effect on the offspring of mercurial treatment of the parents after infection seemed to be generally minimal. The placenta allows the passage of spirochetes, he states, but does not seem to retain them.

118. **Leucoplakia of Vagina and Cancer.**—In almost every case of leucoplakia of the vagina on record, cancer was observed later. The combination of prolapse of the vagina and carcinoma is not a rare occurrence. In treatment of leucoplakia of the vagina the entire vagina and also the uterus should be removed.

Zeitschrift für klinische Medizin, Berlin.

LXIV, Nos. 1-2, pp. 1-192. Last indexed, August 3, p 449.

120 *Non-synchronous Contraction of the Two Ventricles. (Ungleichzeitige Kontraktion der beiden Herzventrikel—Hemisystolie.) E. von Leyden and L. Bassenge.
121 *Kernig's Sign from First Announcement to Date. (Ueber die Beugekontraktur im Kniegelenk bei Meningitis.) W. Kernig.
122 Origin and Clinical Importance of Gallop Rhythm. (Galopprhythmus des Herzens.) J. Pawinski.
123 Behavior of Left Auricle in Disturbance in Transmission of Impulse. (Verhalten des linken Vorhofes bei der Störung der Reizleitung.) G. Joachim.
124 Mechanical Factors in Origin of Emphysema of the Lung and of Bronchiectasia. E. Aron.
125 Importance of Molecular Concentration of Effusions for Their Reabsorption. (Bedeutung der molekularen Konzentration von Flüssigkeitsergüssen für die Resorption derselben.) E. Herzfeld.
126 *Experiences in Treatment of Acute Articular Rheumatism with Constriction Hyperemia. (Behandlung des akuten Gelenkrheumatismus mit Stauungshyperämie.) E. Steinitz.
127 Quantitative Determination of Pepsin and Its Application in the Clinic. (Neue Methode der quant. Pepsinbestimmung.) E. Solms.
128 The Neutrophile Blood Picture in Infectious Diseases. (Das neutrophile Blutbild bei Inf. krankheiten.) J. Arneth.
129 Pathogenesis and Specific Breaking Down of Cancers. (Pathogenese und spez. Abbau der Krebsgeschwülste. II.) P. Bergell and C. Lewin.

120. **Non-synchronous Contraction of the Two Ventricles.**—A recent case is reported which confirms in every respect von Leyden's earlier publications in regard to what he calls "Hemisystolie." It occurs essentially in connection with a considerable degree of mitral insufficiency.

121. **Kernig's Sign in Meningitis.**—Since W. Kernig of St. Petersburg first called attention in 1884 to the contraction of the knee as a sign of meningitis, he has examined thousands of patients with and without meningitis in respect to the occurrence of the sign. In his experience with 208 cases of acute meningitis the sign was unmistakable in 87 per cent. and in 148 cases the clinical diagnosis was confirmed by autopsy. The sign was positive in 93.9 per cent. of the 82 cases of epidemic cerebrospinal meningitis, and in 91.2 per cent. of the 80 cases of the tuberculous variety. The severer the case, the earlier the sign appears. It sometimes vanishes after lumbar puncture, and does not always parallel the stiffness of the back of the neck. The appearance of the sign in other diseases is an indication of involvement of the meninges. In 300 cases of other diseases, typhoid fever, etc., the sign was pronounced in two, and autopsy revealed chronic leptomeningitis in one typhoid patient and spinal meningitis in a patient with lumbar spondylitis. Experience has confirmed the facts that the sign is less constant in children than in adults, that it vanishes when paralysis develops, and may reappear as the paralysis subsides, and, finally, that it is positive in 90 per cent. of cases of chronic leptomeningitis. The absence of the sign, he reiterates, does not exclude meningitis, but its presence in acute cases indicates that meningitis is extremely probable.

126. **Treatment of Acute Articular Rheumatism with Constriction Hyperemia.**—Steinitz reports his experiences with 175 patients treated by constriction hyperemia with and without the salicylates. The application of the constricting band almost invariably relieved the pain. A large number of patients recovered in from 4 to 20 days, as early as those treated with the salicylates. Even if the Bier treatment fails to cure, it can scarcely ever do harm. Complications seemed less frequent and milder than under exclusive salicylic medication. High temperature does not contraindicate it. In case moderate temperature persists unmodified after the fifth day under the Bier treatment, he advises giving salicylates, as also when

the affection changes rapidly from joint to joint. In case of recent endocarditis he advises restricting the salicylates as much as possible and relying mainly on the constricting band.

Hospitalstidende, Copenhagen.

August 21, L, No. 34, pp. 881-920.

130 *Roentgen Treatment of Goiter, Exophthalmic Goiter and Neuralgias. (Röntgenbehandling af Struma, Morbus Basedowii und Neuralgier.) P. K. Faber.

September 4, No. 36, pp. 953-984.

131 Twenty-six Cases of Paratyphoid. K. Schroeder. Commenced in No. 35.

September 11, No. 37, pp. 985-1008.

132 Case of Recurring "Pregnancy Jaundice." (Recidivierende Svangerskabsgulsot.) H. C. Ringsted.

133 Staining of Pale Spirochetes in Sections. (Paavisning af Sp. pallida i Snit.) H. Fogh.

130. Roentgen Treatment of Goiter, Exophthalmic Goiter and Neuralgia.—Faber applied Roentgen treatment in 4 cases of goiter with benefit in all. The goiter subsided completely in one case, to half its former size in another, and in the others the neck became from 2 to 4 cm. smaller in circumference. The patients were unmarried women respectively 43, 45, 41 and 20 years old. He also applied Roentgen treatment in 8 cases of exophthalmic goiter with truly remarkable results in a few instances, even allowing for a spontaneous tendency to recovery in some cases, and the effects of suggestion in others. One patient, a married woman of 25, had presented the symptoms for 4 years, but they subsided under 7 applications of the Roentgen rays for 10 minutes, in the course of 12 days; the same treatment was repeated about a month later. Four months afterward she wrote that she had never felt so well. He applied Roentgen treatment in 17 cases of neuralgia, including 13 of trigeminal neuralgia and 3 of sciatica. Six of the patients were cured and 5 were benefited, but in 6 cases no improvement could be detected, although the conditions were apparently equally favorable. One patient was a man of 71, who had suffered from neuralgia for 10 years. After 10 exposures without appreciable benefit, his remaining 7 teeth were drawn, although they were sound. He has had no pains during the year and a half since. Another patient had had trigeminal neuralgia for 10 years, brief attacks constantly recurring. After 18 exposures he considers himself cured, although he still feels an occasional mild twinge. Another patient, a woman of 68, was cured completely by 6 exposures after suffering from trigeminal neuralgia for 3 years. She was entirely free from pain for three or four months, but now has sometimes a suggestion of neuralgia when she chews hard food or washes her face. Another patient was a woman of 50, who had suffered from sciatica for 2 years. After 2 exposures of the buttocks and upper part of the femur, for 15 minutes each, the pain ceased entirely and has not returned during seven months since. Faber states that the physician should be guarded in his assertions as to the possible benefit from Roentgen treatment of neuralgia, but there is no doubt that the rays have some specific action on the nervous system in some cases, and they deserve wider application, he says. Faber has charge of the Roentgen department at Rovsing's clinic.

Norsk Magasin for Lægevidenskaben, Christiania.

September, LXVIII, No. 9, pp. 1033-1144.

134 Stokes-Adams Disease and "Heart Block" in Man. P. F. Holst.

135 *Transplantation of Ovaries, with Special Regard to the Offspring. V. Magnus.

136 A Case of So-called Abdominal Purpura Terminating in Recovery. A. Holmen.

137 Experiences with Sahli's Desmoid Reaction. K. Thiis.

138 Double Uterus Didelphys with Vaginal Septum. G. Graarud.

135. Transplantation of Ovaries.—Magnus experimented with 25 rabbits, but the experiments were successful in only 11. He aimed especially to ascertain whether colored or albino offspring would be produced after transplantation of ovaries from a colored rabbit into an albino and vice versa. Only 3 of the 11 rabbits had young afterward; in the others adhesions formed, interfering with gestation. The ovaries were removed from a black rabbit and ovaries from an albino were transplanted in their place. Five months later the rabbit was mated with an albino and produced two young—one an albino and one black. Mated again with the same albino male, 7 young were found in the uterus, 2 dark colored and the others probably albino. A supernumerary ovary, a third normal ovary, was discovered in the animal, which was probably the source of the dark colored young. In conclusion Magnus reviews the work done by others in the line of transplantation of ovaries.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

IMMUNE SERA. A Concise Exposition of Our Present Knowledge Concerning the Constitution and Mode of Action of Antitoxins, Agglutinins, Hæmolysins, Bacteriolysins, Precipitins, Cytotoxins and Opsonins. By Dr. Chas. Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. Second Edition, Rewritten, First Thousand. Cloth. Pp. 154. Price, $1.50. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1907.

ELEMENTS OF PHYSICS for Medical Students. By Frederic James M. Page, B.Sc. (Lond.), F.I.C., Associate of the Royal School of Mines, Lecturer on Physics and Chemistry to the London Hospital Medical College, Examiner in Physics and Chemistry to the Study of Society of Apothecaries, London, etc. With a colored Frontispiece and 230 Figures in the Text. Cloth. Pp. 288. Price, $1.25 net. Chicago: W. T. Keener & Co., 1907.

GOUT—ITS PATHOLOGY, FORMS, DIAGNOSIS AND TREATMENT. Originally founded on the Goulstonian Lectures on "The Chemistry and Pathology of Gout," delivered by the author before the Royal College of Physicians of London in 1897. By Arthur P. Luff, M.D., B.Sc., F.R.C.P. (Lond.), Physician to St. Mary's Hospital. Third Edition. Cloth. Pp. 290. Price, $2.50. New York: William Wood & Co., 1907.

THE DEVELOPMENT OF THE HUMAN BODY. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Toronto, formerly Professor of Anatomy in the University of Michigan. Third Edition, Revised and Enlarged. With 275 Illustrations. Cloth. Pp. 528. Price, $3.00. Philadelphia: P. Blakiston's Sons & Co., 1012 Walnut Street, 1907.

MEDICAL ETHICS, A Guide to Professional Conduct. By Robert Saundby, M.D., Edin.; Hon. LL.D., M'Gill; Hon. M.Sc., Birm.; Fellow of the Roy. Coll. of Phys. of London, etc. Second Edition, Enlarged and Rewritten. Cloth. Pp. 144. Price, $2.50 net. London: Charles Griffin & Co., Ltd. Philadelphia: J. B. Lippincott Company, 1907.

THE THIRTEENTH GREATEST OF CENTURIES. By James J. Walsh, M.D., Ph.D., LL.D., Acting Dean and Professor of the History of Medicine and of Nervous Diseases, Fordham University School of Medicine. With Illustrations. Cloth. Pp. 436. Price $2.50 net. Postage, 20 cents extra. Catholic Summer School Press: New York, 1907.

MANUAL OF PHYSIOLOGIC AND CLINICAL CHEMISTRY. By Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry, Toxicology and Pediatrics in the Long Island College Hospital, etc. Third Edition, Revised and Enlarged. 51 Illustrations. Cloth. Pp. 202. Price, $1.00. Philadelphia: P. Blakiston's Sons & Co., 1907.

NIERENDIAGNOSTIK UND NIERENCHIRURGIE, von Dr. G. Kapsammer, I. Teil. With 29 Abbildungen im Texte. Paper. Pages 432. II. Teil. With 34 Abbildungen im Texte. Paper. Pages 567. Wien und Leipsig: Wilhelm Braumuller, K. U. K. Hof-und-Universitäts-Buchhändler, 1907.

MONTHLY SUMMARY OF COMMERCE AND FINANCE OF THE UNITED STATES, No. 2 Series, 1907-1908. August, 1907. Dept. of Commerce and Labor, Bureau of Statistics, O. P. Austin, Chief of Bureau. Paper. Pp. 396. Washington: Government Printing Office, 1907.

BILHARZIOSIS. By Frank Cole Madden, M.D., Melb.; F.R.C.S., Eng.; Professor of Surgery Egyptian Government School of Medicine; Senior Surgeon Kasr-el-Ainy Hospital, Cairo. Illustrated. Cloth. Pp. 78. Price, $2.50. New York: William Wood & Co., 1907.

REVIEW OF LEGISLATION, 1906. New York State Library Bulletin 113, Legislation 33. Oct. 1, 1905, to Oct. 1, 1906. Paper. Pp. 249. Edited by Robert H. Whitten, Sociology Librarian. Albany: New York State Education Department, 1907.

IMMUNOCHEMISTRY. The Application of the Principles of Physical Chemistry to the Study of the Biologic Antibodies. By Svante Arrhenius. Cloth. Pp. 309. Price, $1.60 net. New York: The MacMillan Company, 1907. All Rights Reserved.

NINTH BIENNIAL REPORT OF THE STATE BOARD OF HEALTH to the Governor of North Dakota, for the Years 1905 and 1906. Also Registration Report of Vital Statistics. Paper. Pp. 218. Bismarck: Tribune Printers and Binders, 1906.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION, Fortieth Annual Session, Held at Gulfport, April 9-12, 1907. Roll of Members. Constitution and By-Laws. Cloth. Pp. 344.

THE LIFE OF DAVIS, A.M., M.D., LL.D., 1817-1904. By I. N. Danforth, A.M., M.D., Chicago, Ill. Illustrated. Cloth. Pp. 193. Price, $2.00. Chicago: Cleveland Press, 1907.

THE MEDICAL DIRECTORY OF NEW YORK, NEW JERSEY AND CONNECTICUT. Published by the Medical Society of the State of New York. Volume IX. Cloth. Pp. 948. 1907.

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